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PENSIONS &
Investment Age®
January 25, 1988
Special Profiles Issue
$20 an issue

THE 1,000 LARGEST PENSION FUNDS

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PENSIONS & January 25, 1988
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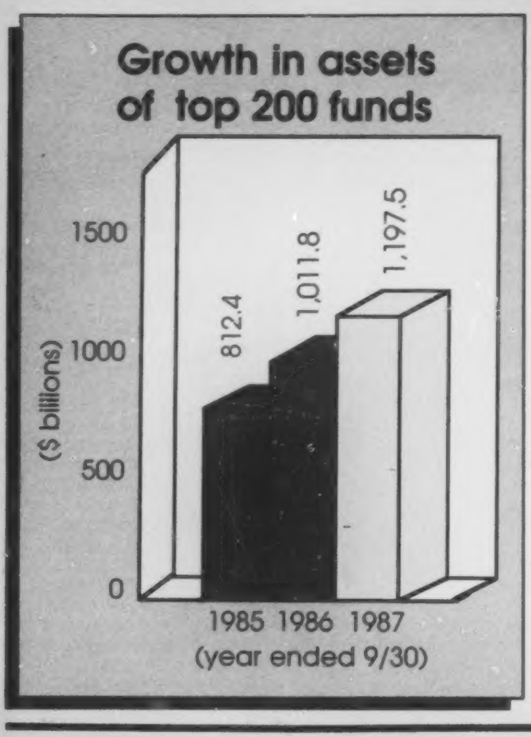
A $1 trillion milestone

Top 100 soared with bull market


Growth in assets of top 200 funds

By Chuck Paustian

Assets of the nation's 100 largest employee benefit funds broke the $1 trillion mark for the first time — climbing 18.5% to $1.002 trillion as of Sept. 30, *Pensions & Investment Age*'s annual pension fund survey shows.

Strong performance of equity investments fueled the increase in assets of the Top 100 funds, as benefit payments continued to outpace employer contributions.

- **The Top 1,000 funds increased 17.8% to $1.578 trillion.**
- **The Top 200 funds increased 18.4% to $1.198 trillion.**

On average, those funds had 48.1% of their assets invested in the equity market, which rose 43.5% during the year ended Sept. 30.

Bond investments, to which the Top 100 funds had allocated an average of 31.9% of their total assets, dampened the growth. The Shearson Lehman Government/Corporate bond index, declined 0.4% during the 12 months ended Sept. 30.

The stellar performance of equity investments during the year ended Sept. 30 also boosted the asset totals of other universes of employee benefit funds. The 1,000 largest funds increased 17.8% to $1.578 trillion, from $1.339 trillion, while the Top 200 funds rose 18.4% to $1.198 trillion, from $1.012 trillion.

The Top 1,000 funds had an average of 47.5% invested in stocks, while the Top 200 funds had, on average, 47.1% of their assets invested in equities.

Those same equity investments that had performed well for funds during the past few years quickly turned the table on most investors during the month of October, although pension funds didn't get hurt as much as the stock indexes did (*see accompanying story this page*).

According to *P&I Age* data, the 25 largest employee benefit funds grew 21.4% to $582 billion as of Sept. 30, from $479.3 billion a year earlier, and the 50 largest employee benefit funds increased 20.3% to $794.2 billion, from $660.1 billion the previous year.

Total employee benefit assets of the bottom 800 funds, those with assets between $1.3 billion and $164 million, rose 16.4% to $380.1 billion as of Sept. 30, from $326.5 billion the year before.

Among the Top 200, corporate funds — generally more aggressive in their investment strategies than their public, union or miscellaneous fund counterparts — posted the largest increase, 21.3%, rising to $540.8 billion as of Sept. 30, from $445.9 billion.

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Plan strategies cut crash costs

Western Teamsters loses just 1.3%

By Nancy K. Webman

Pension funds didn't take nearly as severe a beating in the market crash as the stock indexes did, and asset allocation minimized their losses, a *Pensions & Investment Age* survey shows.

Defined benefit assets of 66 of the nation's largest 200 employee benefit funds surveyed by *P&I Age* declined an average 9.4% during October, faring far better than the Standard & Poor's 500 stock index, which plunged 21.56% in the same month.

"Asset allocation . . . turns out to be far more relevant than what stocks they bought or what managers they hired."
—Gilbert Beebower
SEI

Although the 66 funds had an average of 46% of their assets in the stock market going into the now-legendary month of October 1987, they had more money — an average of 50.9% — in fixed-income instruments.

Those investments, including bonds, short-term investments, guaranteed investment contracts, mortgages and mortgage-backed securities, generally reduced the impact of the stock losses, and scored positive returns for the month, noted Dimitri Raftopoulos, vice president of the advanced product concepts group at SEI Corp., Wayne, Pa.

"Asset allocation, however it is derived, turns out to be far more relevant than what stocks they bought or what managers they hired," said Gilbert L. Beebower, executive vice president of SEI.

"Choices among asset classes made the difference" in October, he said.

That's because "there was no place to hide" in the stock market during that time, said Dan H. Bryant, director of client services at Butcher Consulting in Pittsburgh. "The way not to get killed" would have been to have bought only relatively higher yielding, larger capitalization stocks with lower price-earnings ratios, Mr. Bryant said.

And because stocks that meet all three criteria make up such a tiny per-

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Small-capitalization stocks of companies like computer technology firm MSI Data Corp. are gaining a place in venture capital portfolios, especially because of their post-Oct. 19 crash bargain-basement prices.

Small-cap allure

Cheap stocks attract venture capitalists

By Trudy Ring

Small-capitalization stocks, available at bargain-basement prices after the October crash, are gaining popularity as a venture capital enhancement or option.

"There are so many small public companies now that are at 10 times earnings, that are financially strong . . . with little or no debt — if I had a bias, it would be toward the public side," said Edward T. Tokar Jr., vice president-investments at the $6.8 billion Allied-Signal Corp. pension fund, Morristown, N.J.

Much of the interest in small-cap

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LATE NEWS

Bank of America surrenders

SAN FRANCISCO — BankAmerica Corp., after months of problems with its Bank of America trust accounting system, is shifting most of that institutional trust business to another subsidiary, Seattle First National Bank. Bank of America has spent $60 million to improve the malfunctioning MasterNet system, which cost $20 million. A spokesman said Seattle First's system will take 95% of the bank's clients; arrangements are being worked out for the rest. As of June 30, Bank of America had $16.2 billion in master trust or custody assets for 37 clients.

New plan to tap assets

NEW YORK — City Finance Commissioner Stanley Grayson wants to use the clout of its $30 billion pension fund to make major investments in local economic development projects. But Comptroller Harrison Goldin and city union leaders are cautious, citing questions of fiduciary responsibility and adequate return.

"Given cuts in federal spending, we have to begin looking at new sources of capital to benefit New York City employees and residents," Mr. Grayson told Crain's New York Business, a sister publication of *Pensions & Investment Age*. Plans are still in the preliminary stages and no investment opportunities have been targeted.

"If he (Mr. Grayson) comes up with something with a market rate of return and acceptable risk, we will go along with it; but we've been unable for years to develop a mechanism for such a comprehensive program," said a spokesman for Mr. Goldin.

A new view to corporate finance

NEW YORK — With pension funds stepping up their investments in leveraged buy-outs, company workouts and restructurings, corporate finance investing is emerging as a pension investment class of its own, according to New York State Comptroller Edward V. Regan.

Last week Mr. Regan, who oversees the state's $38.7 billion pension fund, also told an Institute for International Research conference on private placements that consultants need to develop the expertise to advise pension funds on strategy and individual corporate finance investments.

"It is essential that pension systems considering corporate finance investments treat them as they do other major investment categories in terms of process and procedure. It is a separate asset class, and needs established standards, selection and monitoring procedures and controls," Mr. Regan said.

PBGC revises deadlines

WASHINGTON — The Pension Benefit Guaranty Corp. is giving sponsors of defined benefit plans more time to pay the variable portion of the new pension insurance premium.

While employers must pay the $16-per-participant flat rate within two months of the beginning of a plan year, they have 8½ months after the end of the plan year to pay the variable portion. Under the law passed last month, a plan must pay out $6 per participant for every $1,000 of underfunding in addition to the flat rate, up to a maximum total premium of $50 per participant.

HIGHLIGHTS

Wall Street brainpower — P. 68

Wall Street investment bankers used a lot of brainpower in 1987 through the creation of innovative public offerings for clients. *Pensions & Investment Age* takes a detailed look at the 14 best deals created by the Street's financial wizards and describes the problems that made clients look to the Street for help.

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66% drop in portfolio insurance

By Trudy Ring

Portfolio insurance isn't dead, but the pool of assets it covers has shrunk by about two-thirds and the means of implementing it are changing, with options-based strategies attracting interest and assets.

As of Dec. 31, 14 portfolio insurance vendors interviewed by *Pensions & Investment Age* hedged $12.6 billion in the strategy, down from $37 billion as of Sept. 30.

The total portfolio insurance market as of Sept. 30 was about $68 billion (*P&I Age*, Nov. 2); some managers of the strategy declined to provide year-end figures, or could not do so by press time. The $68 billion includes an estimated $22 billion under management for Leland O'Brien Rubinstein Associates Inc., Los Angeles; LOR officials do not divulge this data.

No estimate for LOR is included in the Dec. 31 figure; John O'Brien, chairman and chief executive officer, said assets under management decreased substantially in the fourth quarter, but would not give a dollar figure. Other sources estimated assets covered by LOR programs dropped by between one-half and two-thirds.

"In the current environment, it may be that the cost of portfolio insurance has risen and it may be used less," said Frederick L.A. Grauer, president of Wells Fargo Investment Advisors, San Francisco. Wells Fargo's assets under management for portfolio insurance fell to $3 billion from $9.2 billion in the fourth quarter.

"We certainly are still getting

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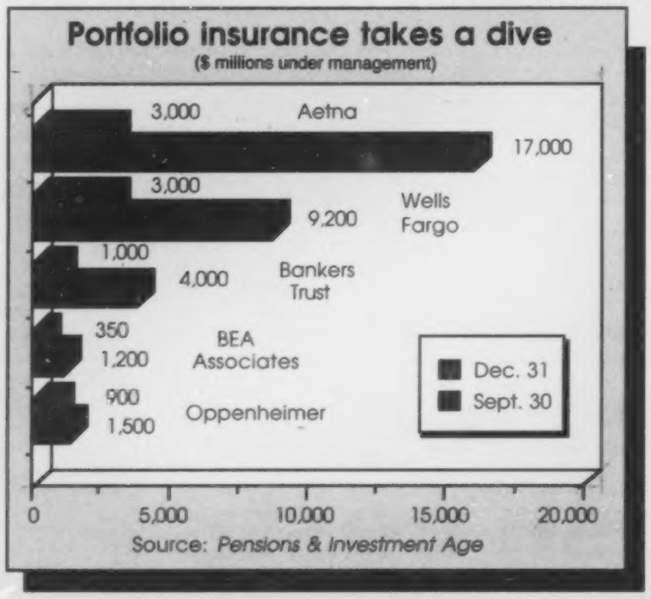

Portfolio insurance takes a dive

($ millions under management)

Source: *Pensions & Investment Age*

Turn-around companies like truckmaker Navistar get help from the budget law.

Some firms get a break

By Marcia Parker

WASHINGTON — Once struggling corporations whose fortunes have improved will be encouraged to make — instead of being penalized for making — large contributions to their underfunded pension plans in a given year under two little-noticed provisions in the new budget reconciliation law passed by Congress last month.

If companies take advantage of the provisions, the huge unfunded liabilities of some corporate pension funds may shrink significantly in 1988 and beyond.

"ERIC had lobbied early on for the elimination of all barriers to full funding," said Marc Ugoretz, executive director of the ERISA Industry Committee, Washington. "We are going to see more

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Congress boosts termination costs

By Nicky Robertshaw

WASHINGTON — Congress just made it more expensive to terminate a pension plan.

Under the Pension Protection Act passed last month as part of the Omnibus Budget Reconciliation Act of 1987, an employer now must pay out for non-vested accrued benefits on top of vested benefits when terminating a defined benefit plan.

The law also contains a little-noticed provision that could cause a flood of pension plan amendments specifying who gets the surplus assets after a termination. Under the provision, employers that terminate plans whose documents don't specify the employer is entitled to the money must wait five years before being able to use the assets. Under the law, such amendments must be in place by Dec. 17, 1988.

Under previous law, an employer needed to cover non-vested accrued benefits only when terminating an overfunded plan and recapturing the surplus assets. Now, an employer must cover the additional benefits in every termination regardless of the plan's funded status. The only exception is when the company can show it qualifies for special hardship rules.

Ambiguous wording in the law left unclear just what employers were liable for if they wanted to end a plan. Last week, the Pension Benefit Guaranty Corp. clarified the "benefit liability" includes accrued non-vested benefits.

But pension experts say the impact of the law won't be that great because any increased obligation stemming from the non-vested benefits is offset to some degree by the reduction in the vesting period to five years from 10, which becomes effective in 1989.

"In view of the shortening of the vesting period, the effect won't be as great as it would have been otherwise," said Gerald Uslander, a principal with William M. Mercer-Meidinger-Hansen, Louisville, Ky.

Many employee benefits experts had asked the government to clarify what they see as ambiguities in the law. Still unclear is whether "benefit liabilities" include such things as death benefits, disability benefits or Social Security supplements.

The PBGC statement "clears up the vested/non-vested problem,

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GTE edict to 24 managers

Perform or reduce fees

By Jacqueline Dutton

STAMFORD, Conn. — GTE Corp.'s 24 domestic equity managers have been given an ultimatum: Live up to promised returns, or fees will be cut.

The edict was issued last month by John Carroll, president of GTE Investment Corp., which oversees the $11 billion GTE pension and savings plans in Stamford, Conn.

Domestic equity management fees will be based on rolling three-year compound annualized performance figures; managers that don't outperform a specified benchmark by 200 basis points won't get their base fees. Nine GTE managers already are working under a new fee structure, and negotiations are continuing with the remainder.

GTE is believed to be the first corporate pension fund to place all of its equity managers on performance-based fees, although more are expected to follow in reaction to disappointing returns last year.

"It's my judgment that the list of managers who did what they said they would do over time is not very long," Mr. Carroll said.

Although some of GTE's managers expressed concern about how the plan would work, Mr. Carroll said none refused to participate and some have similar arrangements with other clients.

"Maybe the way to view it is that instead of paying for a promise, they will pay for results," said John J. Nagorniak, president of Franklin Portfolio Associates Inc., Boston. He would not release the size of the GTE portfolio.

Franklin Portfolio is one of the managers negotiating its entrance into the fee program this year, with performance linked to the Standard & Poor's 500 stock index. Mr. Nagorniak said he has no problem with adopting a schedule because similar arrangements with other funds have worked well.

BMI Capital Corp., New York, entered the program Jan. 1. Frank Houghton, chairman of the firm, said a strong feature of the GTE program is the use of normal portfolios as benchmarks, which he prefers to the S&P 500 because BMI specializes in small- to medium-capitalization stocks and emphasizes growth. It could not be learned how much BMI manages for GTE.

"It's my judgment that the list of managers who did what they said they would do over time is not very long."
—John Carroll
GTE

Mr. Carroll said performance-linked fees won't make his managers any better at handling their portfolios, nor will it necessarily save money (although a pilot program did just that).

Instead, he said, this arrangement will be more equitable, giving more to the best performers and not rewarding underperformers. "We'd rather reward the guy who did better. Even if the same amount (in fees) is paid, we will have paid them out more fairly," Mr. Carroll said.

"One of the ironies is that you have a lot of managers doing the same thing for you but they are all charging different fees," he said.

As with most performance-linked fee arrangements, GTE will base fees on the number of basis points the manager adds to a hypothetical, passively managed benchmark portfolio, also known as a normal mix, which is designed to match the manager's particular style.

The amount value managers must add to

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In the spotlight:

Mitchell Hutchins gains visibility in acquisition of MHIC

NEW YORK — Mitchell Hutchins Asset Management, the investment management arm of PaineWebber Inc. and a virtual unknown in pension management, gained immediate visibility when it bought Manufacturers Hanover Investment Corp. for $27 million early this month.

Part of the visibility came from the relatively low price Mitchell Hutchins paid for MHIC's $21 billion in assets, and part from the size of the assets it gained.

Although Mitchell Hutchins had $16 billion under management before the acquisition, only $1.5 billion of that was for tax-exempt clients, mostly acquired during the past two years.

Now it has added the $21 billion of assets managed by MHIC, which will become a separate, but not independent, part of Mitchell Hutchins, with a new name: Mitchell Hutchins Institutional Investment.

Ed Allinson, president, and Cheryl Gruetzmacher, managing director, of Mitchell Hutchins, decided to buy MHIC because the fit was right and the price was right.

Most of the MHIC assets are fixed-income assets, while most of Mitchell Hutchins' assets are equity assets. And Mitchell Hutchins paid less than 1.5 times revenue for the $21 billion in assets, analysts estimated, a low price by industry standards.

"We had a chance to (grow in the institutional business) ourselves, or acquire a firm," said Mr. Allinson. When Mitchell Hutchins was able to buy MHIC for $26 million, it made sense to do the acquisition, he said.

Cheryl Gruetzmacher, managing director, and Ed Allinson, president, of Mitchell Hutchins, decided to buy the Manufacturers Hanover unit because the fit — and price — were right.

Although Mr. Allinson would not confirm it, Manufacturers Hanover reportedly expected to get $50 million for the investment management unit when it put it on the block late in 1987.

Ms. Gruetzmacher believes MHIC's investment strengths fit well with Mitchell Hutchins' strengths.

Mitchell Hutchins has strong equity investment management, she said, offering an active core approach that focuses on large-capitalization, growth-oriented stocks. The portfolios have a beta of about 1.1 and the turnover is low, only about 40% per year. (Beta is a measure of risk. A portfolio with a beta of

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Photo by Arnie Adler

The sale of Manufacturers Hanover Investment Corp. to Mitchell Hutchins Asset Management has given Mitchell Hutchins a needed boost of visibility in the tax-exempt investment community.

LBO drawing power

Plans make commitments of $1 billion

By Jacqueline Dutton

Although pension plans liquidated some older leveraged buy-out investments in 1987, they committed more money — at least $1 billion — to buy-outs through new pledges.

Statistics from *Pensions & Investment Age*'s survey of the nation's 200 largest pension funds show most were net liquidators of leveraged buy-out assets in 1987.

But the increased commitment to leveraged buy-outs for 1988 has bolstered the capital reserve of the superfunds, such as the $5.6 billion Kohlberg Kravis Roberts & Co. fund, which has several deals in the works.

Executives of the funds that poured more money into buy-outs in 1987 said they did so to meet target allocations, or as part of an ongoing plan to increase investments to that area.

They weren't anticipating the returns they enjoyed when the stock market was at its peak, nor were they trying to take advantage of lower prices.

For example, the $365 million Avon Products Inc. fund, New York, increased its commitment to leveraged buy-outs to $38 million from $23 million during November to maintain a 10% allocation, said Helmuth Fandl, vice president-pension asset management and insurance. KKR received $10 million and the Blackstone Group LBO fund, $5 million.

"We still feel positive about the strategy," said Edgar Cheney, director-pension investments for the $6.9 billion United Technologies Corp. fund, Hartford, Conn. Mr. Cheney said the fund raised its commitment to $200 million from $70 million during 1987.

Had United Technologies made the bigger commitment earlier, it could have lost valuable returns on then-expensive investments when stock prices plummeted Oct. 19 and deals subsequently fell apart.

"We weren't into market timing," Mr. Cheney said, "but at the time, there were a lot of good partnerships out there."

An even more dramatic example is the $430 million commit-

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Funds take harder line

Purse strings tightened

By Barry B. Burr

Pension sponsors intend to get tougher on the investment management fees charged by their money managers, a sampling of corporate executives shows.

The $11 billion GTE Corp. fund is placing all its domestic equity managers on such a schedule (*see accompanying story*).

The $1.5 billion defined benefit fund of Goodyear Tire & Rubber Co., Akron, Ohio, might place its managers on performance-fee schedules. And the pension committee of the $4.5 billion fund of

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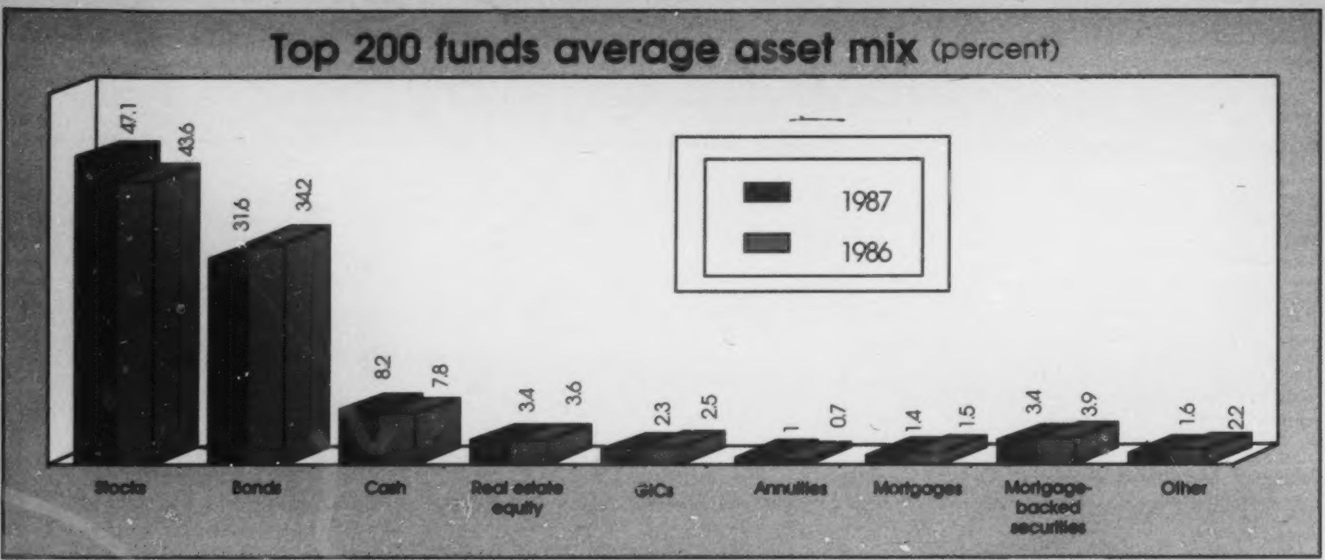

Top 200 ranks reflect corporate alterations

By Jacqueline Dutton

Pension plan terminations and restructurings caused some big changes in *Pensions & Investment Age*'s ranking of the nation's Top 200 employee benefit plans.

Among the biggest names to drop from the list was The LTV Corp., Dallas, which had four plans terminated in late 1986 and early 1987. As of Sept. 30, LTV reported $859 million in assets, to rank 305th. The Pension Benefit Guaranty Corp., however, has moved to reinstate three of the plans to LTV, sparking a legal battle.

The Dart & Kraft Inc. plan, Northbrook, Ill., which ranked 131st in 1986 with $1.9 billion in total assets, was split up during a company restructuring in which all non-food divisions were spun off into Premark International. Premark took approximately one-fifth of the Dart & Kraft assets and now ranks 506th with $478 million; the remaining four-fifths are in the Kraft Inc. plan, ranking 161st with assets of $1.7 billion.

McDermott International Inc. ranked 161st in the previous ranking, but slid off the new rankings after the New Orleans-based fund took advantage of new accounting rules that allowed the overfunded plan to buy some $500 million in annuities, according to Mich Pettyjohn, McDermott vice president. The figure no longer is reflected in the pension plan assets but now can be put on the corporate balance sheet as earnings.

The Ashland Oil Inc. fund, Ashland, Ky., fell out of the Top 200 after the company recaptured $250 million in excess plan assets and subsequently established a floor-offset plan. Ashland, which dropped to 310th place with $846 million in total assets from 199th and $1.1 billion, terminated its defined benefit plan and put most of the assets into an employee stock ownership plan and a new, much smaller companion defined benefit plan.

Two state funds that do not invest in equities fell out of the Top 200 during a year in which other public plans achieved meteoric returns on heavy allocations to the stock market. The State of West Virginia retirement systems, Charleston, grew only 2% during the year ended Sept. 30, up to $1.25-billion from $1.23 billion, dropping to 210th from 183rd. The Indiana State Teachers' Retirement Fund, Indianapolis, 179th in the previous survey, fell out similarly, ranking 202nd.

Also off the list were FMC Corp., Chicago; Cooper Industries Inc., Houston; National Intergroup Inc., Pittsburgh; and Continental Can Co., Norwalk, Conn., now known as Kiewit Continental Inc. The assets of the Conoco Inc. fund were included in this year's E.I. du Pont de Nemours & Co. listing.

The Georgia State Retirement Systems, Atlanta, 31st in the previous survey with $8.3 billion in total assets, were listed separately this time. The Georgia Teachers' Retirement System ranked 48th with $7 billion in assets, and The Georgia Employees' Retirement System ranked 104th with $2.8 billion.

New to this year's list were funds that just missed out on previous Top 200 previous ranking, plus a couple of growing firms — Digital Equipment Corp., Acton, Mass., and Merck & Co. Inc., Rahway, N.J.

Digital, ranked 197th with $1.3 billion in assets; it rose 64 notches after reporting $928 million in assets as of Sept. 30, 1986.

A. Raymond Schmalz, manager-U.S. pension fund, credits the ratings boost to Digital's rapid growth — he said contributions and participants are growing steadily each year — and a successful investment program, which included a heavy stock weighting for most of 1987.

Among those that just missed the previous listing are American Electric Power Co., Columbus, Ohio, at 182nd with $1.5 billion; Pacific Lighting Corp., Los Angeles, at 196th with $1.3 billion; North American Philips Corp., New York, 195th with $1.3 billion; The Times-Mirror Co., Los Angeles, 193rd with $1.3 billion; and the Maine State Retirement System, Augusta, 189th with $1.4 billion.

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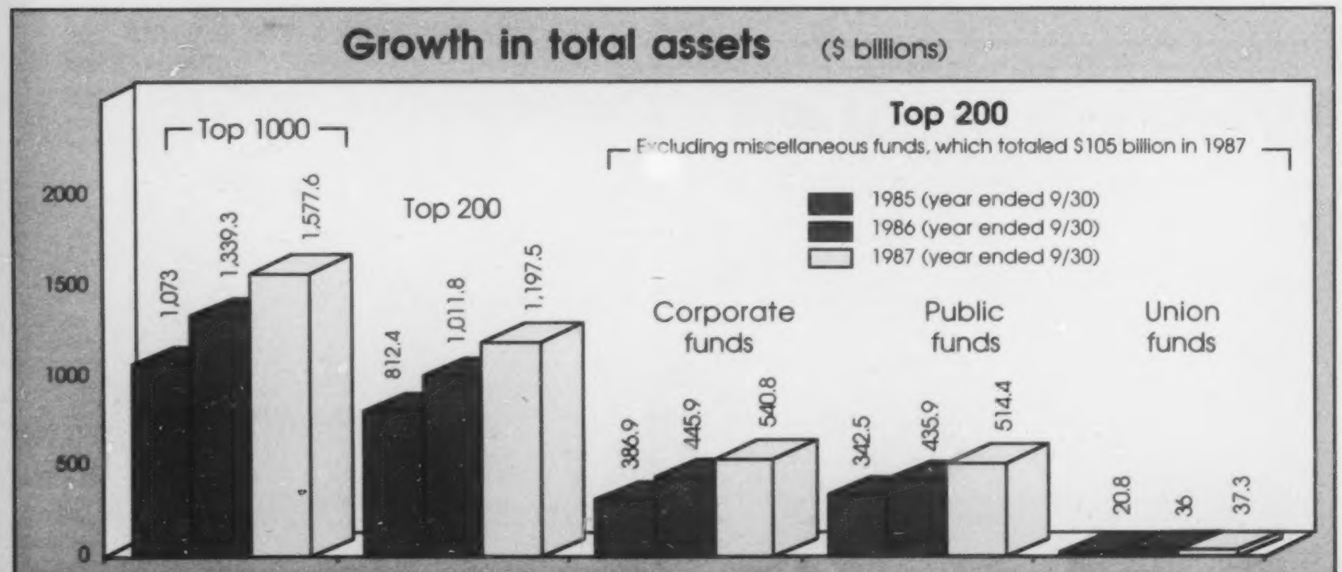

Bond funds return strong

By Joel Chernoff

While some of the nation's largest pension funds unwound their dedicated bond portfolios last year, the trend toward creating such portfolios picked up steam, experts said.

The creation of a $4 billion dedicated bond portfolio by the Maryland State Retirement and Pension Systems, Baltimore, this fall was the largest program done in recent times, and marks renewed interest in the product.

The $8 billion Maryland system switched "when we came to the conclusion that long bonds would meet our objective with more certainty than any other vehicle," said Bennett Shaver, secretary.

In addition, other Top 200 pension funds added to existing dedicated bond portfolios. Southwestern Bell Corp., St. Louis, moved $600 million into its portfolio from stocks and bonds to cover liabilities for employees who retired in 1985 and 1986, said Roger Wohlert, assistant treasurer-corporate finance. And the Minnesota State Board of Investment, St. Paul, added about $700 million to its portfolio to cover new retirees, said Howard Bicker, executive director.

Interest in dedicated bond funds had waned from their popularity peak in the early and mid-1980s. Part of their great appeal at that time was they enabled corporate pension fund executives to set up high-yielding portfolios while lowering corporate pension contributions.

The portfolios match bond cash flows with an expected stream of liabilities, usually those for retirees. Because the yields are locked in, plan sponsors were able to build those higher rates into their actuarial rate of return assumptions.

But the adoption of the Financial Accounting Standards Board's Statement 87 on pension accounting rules eliminated the bookkeeping advantage, because now current market rates are used for valuing assets.

(An immunized bond portfolio, a form of dedication, involves matching the duration of a bond portfolio against the duration of liabilities to protect against interest-rate fluctuations, but does not involve matching cash flow with liability streams.)

The move toward dedications surprised some professionals.

Martin L. Leibowitz, managing director at Salomon Brothers Inc.'s bond portfolio analysis group, had predicted last spring a high percentage of such portfolios would be liquidated (*Pensions & Investment Age*, March 23).

"What we did not fully foresee was that dedications serve another purpose," he said. The portfolios provide a "comfort level" to various parties, such as plan participants and corporations, by providing a "reliable, well-defined, quality and secure process," he explained.

"Dedication has in fact had a

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Indexers most popular

By Marlene Givant

Although teen-agers will attest that measuring popularity isn't easy, in the case of money managers, the task is straightforward.

According to results of *Pensions & Investment Age*'s survey of the nation's largest employee benefit funds, indexers were the most widely used managers in several categories.

Of the 647 managers used by the nation's largest pension funds, the most widely used managers overall were J.P. Morgan Investment Management Inc., New York, claiming 62 clients among the Top 200.

Prudential Asset Management Group, Newark, N.J., had 57 clients.

Bankers Trust Co. — Investment Management Group, New York, a major index player, had 52 clients.

Aetna Life Insurance Co., Hartford, Conn., boasted 45 clients, and Trust Co. of the West, Los Angeles, had 44.

"All of the top five overall have been aggressive developers of new products," said Ronald A. Jones, partner with Hewitt Associates, Lincolnshire, Ill.

"They looked for a need and sought to fill it or developed demand for a product by offering one."

He cited as an example Bankers Trust, which capitalized on the apparent demand for passive products.

The managers that fill out the list of the 10 most-used management firms include three that have been successful at attracting clients for passive management.

Wells Fargo Investment Advisors, San Francisco, was used by 43 of the Top 200 funds.

Mellon Capital Management, San Francisco, had 42 clients.

And Alliance Capital Management, New York, which also ranked as the favorite equity manager, was next with 41 clients.

Jennison Associates Capital, New York, ranked ninth with 34 clients.

Jennison was followed by Equitable Capital Management Corp., New York, and Pacific Investment Management Co., Newport Beach, Calif., the top fixed-income manager, which tied for 10th place with 33 clients each.

The managers among the Top 10 overall often were repeaters in several categories.

Morgan ranked 10th among real estate managers; second among bond managers and tied for eighth among equity managers.

Prudential was top in real estate and third in GICs (with Aetna).

Bankers Trust ranked ninth for bonds (with State Street Research & Management Co., Boston), second for cash and short-term assets (along with Discount Corp. of New York Advisers, New York and Mellon) and fourth for equities.

Aetna was fourth for real estate (with Equitable) and third for GICs (with Prudential).

And TCW was third among balanced managers and tied for second with JMB Institutional Realty, Chicago, for real estate.

Mellon ranked second (along with Bankers and Discount Corp.) for cash and short-term assets and fifth for equities (in a tie with Delaware Investment Advisers, Philadelphia).

Wells Fargo and Equitable were among the top managers for only one category outside overall management.

Wells ranked third for equities while Equitable was fourth (along with Aetna) in real estate.

Only Jennison ranked among the Top 10 overall without gaining that distinction in a separate category.

The top international managers were not singled out because some funds responding to the Top 200 survey did not distinguish international from domestic equity managers.

The Top 200 funds reported using 87 real estate managers and 26 GIC managers, but only 33 balanced managers and 22 cash and short-term managers.

As for staple assets, funds used 157 bond managers and more than double that amount — 347 — equity managers.

Five of the top managers overall ranked among the top equity managers.

By number of clients, the most used equity managers was Alliance, with 34.

Following Alliance was Capital Guardian Trust Co., Los Angeles, with 32.

Wells Fargo was next with 26.

Following Wells Fargo was Bankers Trust, with 24.

Mellon and Delaware were next, tied with 19.

INVESCO Capital Management, Atlanta, was next with 18.

Trinity Investment Management Corp., Boston, and J.P. Morgan followed, tied at 17.

And Batterymarch Financial Management and State Street Research & Management Co., both in Boston, were next, tied at 16.

Alliance was No. 1 in equities despite its specialty in growth stocks, which have underperformed the market for several years.

And Batterymarch still is popular even though it lost a number of clients in 1987 because of poor performance (*P&I Age*, May 4).

The leading bond manager was PIMCO, with 28 clients. J.P. Morgan was second, with 23. Criterion Group, Houston, was third with 14. Loomis, Sayles & Co. Inc., Boston, was fourth, with 13.

Tied for the next spot with 12 clients each were Lehman Management Co., New York; MacKay-Shields Financial Corp., New York, and Miller, Anderson and Sherrerd, Bala Cynwyd, Pa.

Fischer, Francis, Trees & Watts Inc., New York, were ranked next among bond managers, with 11 clients. And Bankers Trust and State Street Research were tied with 10 clients.

The top equity and bond managers were for the most part seasoned firms.

"They're what I call long-term survivors; not always on top (in performance) but for the most part survivors by not failing," Mr. Jones said.

Trinity is one exception because it's a relative newcomer with about five or six years as a large, aggressive firm, he added.

The real estate list, longer than the rest because of many ties among rankings, was led by Prudential, which had 31 clients. TCW and JMB followed, with 30; Aetna, Equitable and The RREEF Funds, San Francisco, with 27; LaSalle Advisors [illegible], Chicago, with 14; and Heitman Advisory Corp., Chicago; and Security Capital Real Estate Corp., New York, with 13.

Four firms tied for 10th place, with 11 clients each: Aldrich, Eastman & Waltch, Boston; Coldwell Banker, Los Angeles; Copley Real Estate Advisors, Boston; and J.P. Morgan.

John Hancock Financial Services, Boston, and Metropolitan Life Insurance Co., New York, headed the GIC team, with six clients.

They were followed by Aetna and Prudential with five clients; The Travelers Cos., Hartford, Conn., with three; and The New England, Boston, and New York Life Insurance Co., New York, with two.

The top three balanced managers were The Boston Co. Inc., Boston; Loomis, Sayles; and TCW. ■

Top managers overall

Manager	# funds using
J.P. Morgan	62
Prudential	57
Bankers Trust	52
Aetna	45
TCW	44

Top equity managers

Manager	# funds using
Alliance	34
Capital Guardian	32
Wells Fargo	26
Bankers Trust	24
Mellon	19
Delaware	19

Top bond managers

Manager	# funds using
Pacific Investment	28
J.P. Morgan	23
Criterion	14
Loomis, Sayles	13
Lehman	12
MacKay-Shields	12
Miller, Anderson & Sherrerd	12

Profile statistics at a glance*

($ billions)

	1987	1986
Top 1,000 assets	1,577.6	1,339.3
Top 200 assets	1,197.5	1,011.8
Top 100 assets	1,002.4	845.7
Top 50 assets	794.2	660.1
Top 25 assets	582.0	479.3
Top 200 defined benefit	984.9	831.1
Top 200 defined contribution	104.2	92.2
Top 200 profit-sharing	19.1	17.4
Top 200 thrift/401(k)	67.6	58.1

Top 200 fund statistics

($ billions)

	1987	1986
Internal mgmt.**	475.8	411.9
Internally managed equities	192.6	
Internally managed fixed	206.2	
Internally managed short-term	38.6	
Internally managed other	25.8	
Stock index funds	141.3	108.9
Internally managed indexed equities	63.0	
Bond index funds	45.0	13.8
Internally managed indexed fixed	2.7	
Real estate equity	28.0	26.2
Mortgages	31.2	30.3
Mortgage-backed securities	49.9	50.5
GICs	8.8	10.5
Overseas	31.9	24.5
Overseas - equity	26.3	
Overseas - fixed	4.5	
Overseas- other	1.1	
Venture capital	2.9	3.3
Dedication/immunization	24.6	29.4
Oil & gas	1.3	0.8
LBOs	3.7	2.8
Contributions paid	40.1	40.3
Benefits paid	38.2	36.9
Portfolio insurance	7.3	8.6
Private placements	19.6	NA

Number of top 200 funds using alternative investments

	1987	1986
Intermal mgmt.	125	121
Stock index funds	105	100
Bond index funds	41	32
Real estate equity	134	130
Mortgages	60	63
Mortgage-backed securities	86	98
GICs	48	62
Overseas	94	93
Venture capital	72	75
Dedication/immunization	27	37
Oil & gas	22	22
LBOs	22	26
Stock index futures	72	63
Fixed-income futures	46	46
Stock options	65	62
Fixed-income options	19	22
Portfolio insurance	13	19
Private placements	44	NA

* Based on pension assets, not total assets

** Total is greater because some funds did not break out assets

How it was compiled

The information on employee benefit funds contained in this issue was developed in several steps.

Questionnaires were sent to the more than 1,200 funds in *Pensions & Investment Age*'s data base. The largest 200 and largest 1,000 were identified from the completed questionnaires, follow-up telephone calls and a cross-check with information supplied by Money Market Directories Inc., publisher of the 1988 Money Market Directory of Pension Funds and Their Investment Managers.

The more detailed information contained in the profiles of the 200 largest funds was obtained from the completed questionnaires, interviews with fund officials and articles published in *P&I Age*.

In most cases, the information reflects fund operations as of Sept. 30, 1987.

In cases where the fund supplied data considered too dated, *P&I Age* estimated the asset growth based on one of the following methods: the asset mix the fund supplied for last year's survey; the asset mix reported in Money Market Directory; or *P&I Age*'s reported average asset mix for the type of fund, i.e., union, corporate or public.

Where no information was available from the fund, statistics were taken from the 1988 Money Market Directory.

In the tables accompanying the profiles, all figures except for internal management and defined contribution plans are based on defined benefit assets. The asset mixes for the Top 200 and Bottom 800 funds represent the average of all reported mixes for the respective funds. NA (not available) was applied to funds that had less than $1 million allocated to the particular investment as well as to funds that could not provide a breakout of assets but are known to invest in those areas. Dollar amounts in all charts were rounded to the nearest million.

A rocky ride in '87

PBGC on roller coaster with liabilities, personnel

By Nicky Robertshaw

WASHINGTON — The Pension Benefit Guaranty Corp. saw its liabilities seesaw in the 12 months ended Sept. 30.

With the arrival and subsequent departure of nearly $2 billion in liabilities from three underfunded plans of The LTV Corp., the Pension Benefit Guaranty Corp.'s liability soared to $3.8 billion, then dropped below the $2 billion mark by Sept. 30.

Although final figures are not available, the PBGC estimates that if the courts uphold the restoration of the three plans to LTV, the total liability will be somewhat less than $2 billion. The final home of the plans will be decided by U.S. District Court in New York.

PBGC officials would not release the size of the agency's assets as of Sept. 30. Although officials would not be specific, *Pensions & Investment Age* estimates the PBGC lost $146 million in October because of the market turmoil. Post-crash and without LTV, *P&I Age* estimates assets of the agency at $2 billion.

Noting the year started with grave problems for the PBGC and threats to its well-being, Executive Director Kathleen P. Utgoff called 1987 a "pivotal year" that ended with the situation significantly improved.

She pointed to the restoration of the LTV funds as helping reverse a trend in terminations of large, unfunded pension plans, such as those of Wheeling-Pittsburgh Corp. and Allis-Chalmers Corp. in 1986. In addition, provisions of the Budget Reconciliation Act of 1987 not only would reduce the liabilities in plans that are terminated in the future, but also could make companies less likely to terminate.

It also was a pivotal year in terms of fund personnel, as the two top investment officers left the PBGC in late 1987. They have not yet been replaced.

Jay A. Jupiter, who had been investment management director for the financial operations division of the PBGC, moved to the Federal Home Loan Bank Board as deputy director of its mergers and acquisitions program in October.

Julie H. Shriver, who was manager of the investment management division, left in December to become an investment officer for the International Monetary Fund staff retirement plan.

As a result, Larry Maslin, director of the financial operations department, is temporarily in charge of investments as acting director of the investment management division.

Wilshire Associates, Santa Monica, Calif., which was hired earlier this year, will help with overall managerial advice and investment guidance.

Except for the five farm equity managers hired a year ago — Disciplined Investment Advisors, Evanston, Ill; Furman Selz Capital Management Inc., New York; Loomis, Sayles & Co. Inc., Pasadena, Calif.; J.P. Morgan Investment Management Inc., New York; Nelson, Benson & Zellmer Inc., Denver — there have not been any other additions to the PBGC's money managers.

Its other managers are, for equities: American National Bank & Trust of Chicago; Chase Investors Management Corp., New York; Dimensional Fund Advisors, Santa Monica, Calif.; First RepublicBank, Dallas; Lazard Freres Asset Management, New York; Lehman Management Co., New York; McCowan Associates Inc., New York; and United Capital Management, Denver.

Its bond managers are Pacific Investment Management Co., Newport Beach, Calif., and Morgan Stanley Asset Management, New York.

State Street Bank and Manufacturers Hanover serve as master trustees. ■

Bond indexing booms

By Trudy Ring

Bond indexing by the nation's largest pension funds soared in the year ended Sept. 30, while stock index funds, after allowing for market gain, showed a net loss of assets.

Of the Top 200 funds, 41 reported using bond index funds, with a total of $45 billion in the strategy, including $2.7 billion run in-house. A year ago, 32 funds had indexed bonds, with $13.8 billion invested.

In the 12 months ended Sept. 30, the Shearson Lehman Government/Corporate bond index was down 0.4%; this would have brought the 1987 figure to $13.75 billion without new contributions. Using that as a base, the assets in indexed bonds grew 227% in the year ended Sept. 30.

As of Sept. 30, 105 of the Top 200 funds reported using indexed stocks, with $141.3 billion invested, including $62.97 billion run in-house. A year earlier, 100 funds reported $108.9 billion in indexed stocks.

The 43.5% gain of the Standard & Poor's 500 stock index in the 12-month period would have brought the 1987 figure to $156.3 billion without new contributions — so, assets in stock index funds actually decreased 9.6%. At least part of the decrease can be accounted for in funds not revealing the amount of their indexation.

The indexed bond surge largely was because of public funds. The $33.6 billion New York City Retirement Systems continued restructuring their bonds, raising their indexed total to $18.31 billion from $458 million a year earlier.

The $23.7 billion California State Teachers' Retirement System, Sacramento, moved fixed income assets to indexation from active management, preparatory to bringing it in-house. It had $5.8 billion in bond index funds as of Sept. 30; last year it reported none.

The $8.5 billion Exxon Corp. pension fund, New York, and the $3.2 billion Mississippi Public Employees' Retirement System, Jackson, both completed expected moves in increasing their bond index funds. Exxon's rose 61.8%, to $377 million, while Mississippi's increased 58%, to $980 million.

Stock indexing had at least one major dropout, while another cut back indexed stocks to harvest gains.

The $44 billion California Public Employees' Retirement System, Sacramento, eliminated a $5.5 billion S&P 500 fund and put the assets in six core portfolios that are managed passively, but not indexed.

The $8.2 billion Maryland State Retirement and Pension Systems, Baltimore, sold $2.3 billion in indexed stocks in late September, using the proceeds to fund a portion of a $4 billion dedicated bond portfolio. As of Sept. 30, Maryland's indexed stocks stood at $1.91 billion, down from $2.7 billion a year earlier. ■

Top 200 asset mix

Corporate

	1987 %	1986 %
Stocks	54.5	50.1
Bonds	23.9	27.7
Cash	8.2	7.9
Real estate equity	4.2	4.5
GICs	3.6	3.4
Annuities	1.7	1.3
Mortgages	0.6	0.5
Mortgage-backed securities	0.9	1.0
Other*	2.4	3.6

Public

	1987 %	1986 %
Stocks	39.0	33.4
Bonds	40.3	44.2
Cash	8.2	7.8
Real estate equity	2.5	2.3
GICs	0.4	0.4
Annuities	0	0
Mortgages	2.2	2.9
Mortgage-backed securities	6.6	8.3
Other*	0.8	0.7

Union

	1987 %	1986 %
Stocks	38.0	36.1
Bonds	39.0	39.2
Cash	10.1	7.9
Real estate equity	3.9	3.9
GICs	1.8	2.9
Annuities	2.4	0
Mortgages	1.7	1.6
Mortgage-backed securities	1.7	4
Other*	1.4	4.4

* Other includes venture capital, oil and gas and miscellaneous investments.

Bottom 800 asset mix

Aggregate[1]

	1987 %
Stocks	44.4
Bonds	29.8
Cash	10.4
Real estate equity	3.0
Mortgages	1.3
Mortgage-backed securities	2.1
GICs	3.5
International	2.4
Annuities	1.2
Venture capital	0.5
Oil & gas	0
LBOs	0
Private placements	0.3
Other	1.1

Corporate

	1987 %	1986 %
Stocks	50.8	49.9
Bonds	23.2	25.8
Cash	10.4	10.0
Real estate equity	3.1	3.8
Mortgages	0.4	*
Mortgage-backed securities	0.8	0.7
GICs	4.9	5.1
International	3.1	2.5
Annuities	1.6	*
Venture capital	0.6	0.4
Oil & gas	0.1	0.1
LBOs	0	*
Private placements	0.3	*
Other	0.7	1.4
Options	NA	0.1
Futures	NA	0.2

Public

	1987 %	1986 %
Stocks	48.2	37.4
Bonds	26.3	38.0
Cash	10.5	11.2
Real estate equity	3.0	3.6
Mortgages	0.9	*
Mortgage-backed securities	1.3	3.7
GICs	4.0	1.2
International	2.9	0.4
Annuities	1.3	*
Venture capital	0.6	0.2
Oil & gas	0	0
LBOs	0	*
Private placements	0.3	*
Other	0.7	4.2
Options	NA	0.1
Futures	NA	0

Union

	1987 %	1986 %
Stocks	31.0	29.5
Bonds	39.2	37.6
Cash	9.5	10.3
Real estate equity	3.5	4.0
Mortgages	2.2	*
Mortgage-backed securities	4.8	7.1
GICs	3.7	5.7
International	0.4	0.4
Annuities	1.5	*
Venture capital	0.1	0.2
Oil & gas	0	0
LBOs	0	*
Private placements	0.5	*
Other	3.6	5.0
Options	NA	0.2
Futures	NA	0

* Included in other

[1] 1986 aggregate data not available

Top 200 pension funds/sponsors

Assets in $ millions

1.	TIAA-CREF	66,171
2.	California Public Employees'	44,036
3.	General Motors	40,000
4.	New York State/Local	38,747
5.	AT&T	37,577
6.	N.Y.C. Retirement Systems	33,633
7.	General Electric	27,300
8.	California State Teachers	23,714
9.	New York State Teachers	23,035
10.	IBM	22,457
11.	Ford Motor	19,800
12.	N.J. Division of Investment	19,785
13.	Texas Teachers	18,930
14.	E.I. du Pont de Nemours	16,868
15.	Michigan State	16,680
16.	Wisconsin Investment Board	15,632
17.	Ohio Public Employees	14,985
18.	Ohio Teachers Retirement	14,821
19.	NYNEX	14,336
20.	Florida Board of Administration	13,700
21.	Ameritech	12,592
22.	North Carolina Retirement	12,446
23.	Pennsylvania School Employes	12,021
24.	Bell Atlantic	11,502
25.	University of California	11,228
26.	GTE	11,065
27.	Washington Investment Board	10,600
28.	USX	10,150
29.	BellSouth	10,070
30.	Pacific Telesis Group	9,867
31.	Minnesota State Board	9,706
32.	Rockwell International	9,200
33.	Oregon Public Employes	8,789
34.	Exxon	8,505
35.	Teamsters, Central States	8,482
36.	Maryland State Retirement	8,274
37.	Eastman Kodak	8,264
38.	Los Angeles County	8,262
39.	Sears, Roebuck	8,225
40.	U S WEST	8,046
41.	Lockheed	8,025
42.	Pennsylvania State Employes'	7,965
43.	Colorado Public Employees'	7,802
44.	Virginia Supplemental Retirement	7,610
45.	Western Conference of Teamsters	7,524
46.	United Nations Joint Staff	7,428
47.	Southwestern Bell	7,231
48.	Georgia Teachers Retirement	7,080
49.	Illinois Teachers' Retirement	7,053
50.	United Technologies	6,946
51.	Shell Oil	6,918
52.	Allied-Signal	6,808
53.	McDonnell Douglas	6,800
54.	Boeing	6,538
55.	Alabama Retirement Systems	6,233
56.	Arizona State Retirement System	6,182
57.	Tennessee Consolidated	6,132
58.	Chevron	5,831
59.	Connecticut Trust Funds	5,736
60.	Hughes Aircraft	5,400
61.	South Carolina Retirement	5,171
62.	Westinghouse Electric	4,976
63.	UMWA Health & Retirement	4,825
64.	General Dynamics	4,800
65.	Texas Employees Retirement	4,792
66.	Unisys	4,691
67.	Caterpillar	4,423
68.	Mobil Oil	4,336
69.	Amoco	4,300
70.	Monsanto	4,300
71.	Prudential Insurance	4,294
72.	Chrysler	4,225
73.	Iowa Public Employees	3,820
74.	Procter & Gamble	3,580
75.	Pacific Gas and Electric	3,560
76.	RJR Nabisco	3,540
77.	Illinois Municipal Retirement	3,536
78.	Massachusetts Board	3,500
79.	Northrop	3,402
80.	Hawaii State Employees	3,400
81.	Alaska State Retirement System	3,340
82.	Kansas Public Employees'	3,311
83.	Chicago Teachers	3,280
84.	Utah State Retirement Fund	3,246
85.	Atlantic Richfield	3,236
86.	Mississippi Public Employees	3,218
87.	Missouri Public School	3,196
88.	San Francisco Employees	3,189
89.	Delta Air Lines	3,150
90.	American Airlines	3,130
91.	Metropolitan Life Insurance	3,113
92.	Allegis	3,100
93.	Aluminum Co. of America	3,072
94.	Illinois State Universities	3,016
95.	ITT	3,015
96.	United Methodist Church	2,957
97.	Detroit Retirement Systems	2,948
98.	Dow Chemical	2,890
99.	Textron	2,881
100.	Consolidated Edison	2,853
101.	Minnesota Mining & Mfg.	2,843
102.	Martin Marietta	2,809
103.	Grumman	2,800
104.	Georgia Employees' Retirement	2,770
105.	National Electrical Contractors	2,770
106.	Los Angeles Fire & Police	2,744
107.	Louisiana Teachers	2,741
108.	Xerox	2,734
109.	Bethlehem Steel	2,699
110.	General Foods	2,676
111.	J.C. Penney	2,663
112.	Kentucky Teachers'	2,656
113.	Tenneco	2,635
114.	Illinois Board of Investment	2,600
115.	World Bank	2,600
116.	Tennessee Valley Authority	2,574
117.	Trans World Airlines	2,571
118.	Eastern Air Lines	2,565
119.	Kentucky Retirement Systems	2,556
120.	Southern	2,550
121.	Nevada Public Employees'	2,515
122.	Ohio Police & Firemen	2,502
123.	International Paper	2,500
124.	Raytheon	2,455
125.	Ohio School Employees	2,409
126.	Texaco	2,400
127.	Deere	2,346
128.	Honeywell	2,299
129.	Aetna Life & Casualty	2,294
130.	Boilermaker Blacksmith	2,230
131.	Owens-Illinois	2,230
132.	TRW	2,228
133.	Pension Reserves Board	2,202
134.	Indiana Public Employees'	2,158
135.	Presbyterian Church (U.S.A.)	2,122
136.	Los Angeles City Employees	2,101
137.	Southern Baptist Convention	2,061
138.	Southern California Edison	2,060
139.	National Rural Electric	2,048
140.	Citicorp	2,035
141.	Halliburton	2,023
142.	Sun	2,010
143.	Bakery & Confectionery Union	2,000
144.	Armco	1,964
145.	Commonwealth Edison	1,951
146.	Standard Oil	1,946
147.	Louisiana State Employees'	1,944
148.	Philip Morris	1,892
149.	Eli Lilly	1,875
150.	Inland Steel Industries	1,840
151.	Travelers Insurance	1,823
152.	Rhode Island Employees'	1,809
153.	PPG Industries	1,800
154.	Hospital and Health Care Employees	1,797
155.	Goodyear Tire & Rubber	1,783
156.	Gencorp	1,777
157.	Arkansas Teacher Retirement	1,774
158.	Florida Power & Light	1,746
159.	Okla. Teachers' Retirement	1,735
160.	International Operating Engineers	1,718
161.	Kraft	1,710
162.	Southern New England Telephone	1,700
163.	Abbott Laboratories	1,680
164.	Union Carbide	1,663
165.	K mart	1,620
166.	American Stores	1,611
167.	Navistar International	1,606
168.	Hercules	1,603
169.	Texas Municipal Retirement	1,600
170.	Plumbers, National Headquarters	1,599
171.	Philadelphia Board of Pensions	1,587
172.	New York Life Insurance	1,566
173.	Chicago Municipal Employees	1,545
174.	Hewlett Packard	1,540
175.	Houston City	1,500
176.	Texas County & District	1,500
177.	Episcopal Church Pension	1,488
178.	New Mexico Educational Board	1,482
179.	Bechtel Power	1,478
180.	New Mexico Public Employees	1,471
181.	Los Angeles Water and Power	1,470
182.	American Electric Power	1,465
183.	Southern California UFCW	1,463
184.	IAM National Pension Fund	1,454
185.	Pan American World Airways	1,445
186.	Unocal	1,405
187.	Baltimore City	1,400
188.	Teamsters, New England	1,392
189.	Maine State Retirement System	1,390
190.	Merck	1,377
191.	Motorola	1,358
192.	Milwaukee City Employees'	1,355
193.	Times Mirror	1,354
194.	CIGNA	1,351
195.	North American Philips	1,347
196.	Pacific Lighting	1,341
197.	Digital Equipment	1,322
198.	Teledyne	1,310
199.	Idaho Public Employee	1,309
200.	Army and Air Force Exchange	1,305
	Total	1,197,475

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets
201.	Delaware State	Dover	1,300
202.	Indiana State Teachers	Indianapolis	1,300
203.	Upjohn	Kalamazoo, Mich.	1,300
204.	United Parcel Service	Greenwich, Conn.	1,275
205.	John Hancock Mutual	Boston, Mass.	1,267
206.	Michigan Municipal	Lansing	1,263
207.	Burlington Northern	Seattle	1,250
208.	Johnson & Johnson	New Brunswick, N.J.	1,250
209.	Santa Fe S. Pacific	Chicago	1,250
210.	West Virginia State	Charleston	1,250
211.	Dun & Bradstreet	New York	1,244
212.	Northwest Airlines	St. Paul, Minn.	1,241
213.	BATUS	Louisville, Ky.	1,239
214.	N. Calif. Retail Clerks	Walnut Creek	1,239
215.	Okla. Public Employees	Oklahoma City	1,232
216.	Occidental Petroleum	Los Angeles	1,228
217.	American Brands	Old Grnwich, Conn.	1,217
218.	Chicago Police	Chicago	1,208
219.	American Bar	Chicago	1,202
220.	Fed. Dept. Stores	Cincinnati	1,200
221.	National Intergroup	Pittsburgh	1,200
222.	Sheet Metal Workers	Alexandria, Va.	1,200
223.	TU Electric	Dallas	1,200
224.	Warner Lambert	Morris Plains, N.J.	1,200
225.	American Cyanamid	Wayne, N.J.	1,189
226.	Champion International	Stamford, Conn.	1,189
227.	Texas Utilities	Dallas	1,187
228.	Financial Institutions	White Plains, N.Y.	1,185
229.	Sandia National Labs	Albuquerque, N.M.	1,183
230.	Pfizer	New York	1,177
231.	Arkansas Public	Little Rock	1,165
232.	Colgate-Palmolive	New York	1,164
233.	Chef Pierre	Traverse City, Mich.	1,161
234.	United Telecom.	Kansas City, Mo.	1,146
235.	James River	Richmond, Va.	1,140
236.	Missouri State Empl.	Jefferson City	1,130
237.	Op. Eng. 302/612	Seattle	1,128
238.	Ladies Garment Wrkrs.	New York	1,126
239.	Philadelphia Electric	Philadelphia	1,124
240.	FMC	Chicago	1,121
241.	Wyoming State	Cheyenne	1,112
242.	Litton Industries	Beverly Hills, Calif.	1,111
243.	Duke Power	Charlotte, N.C.	1,102
244.	CBS	New York	1,100
245.	Cooper Industries	Houston	1,100
246.	District of Columbia	Washington	1,100
247.	Montana State	Helena	1,100
248.	S. Dakota Retirement	Pierre	1,099
249.	Rohm and Haas	Philadelphia	1,095
250.	Plumbers Local 798	Tulsa, Okla.	1,090
251.	Columbia Gas System	Wilmington, Del.	1,085
252.	N. Calif. Carpenters	Oakland	1,080
253.	Kaiser Permanente	Oakland, Calif.	1,075
254.	Kiewit Continental	Norwalk, Conn.	1,070
255.	Manufacturers Hanover	New York	1,069
256.	Crown Zellerbach	San Francisco	1,060
257.	McDermott Int'l	New Orleans	1,054
258.	Safeway Stores	Oakland, Calif.	1,052
259.	SmithKline Beckman	Philadelphia	1,051
260.	Whirlpool	Benton Har., Mich.	1,048
261.	Bristol-Myers	New York	1,044
262.	Cook County	Chicago	1,032
263.	MEBA Pension	Baltimore	1,031
264.	Scott Paper	Philadelphia	1,030
265.	S. Calif. Carpenters	Los Angeles	1,028
266.	New Hampshire	Concord	1,027
267.	Hallmark Cards	Kansas City, Mo.	1,020
268.	Public Service Electric	Newark, N.J.	1,020
269.	Corning Glass Works	Corning, N.Y.	1,017
270.	General Public Utilities	Parsippany, N.J.	1,014
271.	American Standard	New York	1,008
272.	Kimberly-Clark	Dallas	995
273.	Schlumberger	New York	993
274.	Montgomery Ward	Chicago	987
275.	Union Pacific	New York	973
276.	Nada Retirement	McLean, Va.	971
277.	Ralston Purina	St. Louis	963
278.	Eaton	Cleveland	960
279.	CIBA-GEIGY	Ardsley, N.Y.	954
280.	Fluor	Irvine, Calif.	952
281.	Ministers/Missionaries	New York	945
282.	Carteret Publishing	Morehead City, N.C.	940
283.	Cummins Engine	Columbus, Ind.	937
284.	Olin	Stamford, Conn.	935
285.	W.R. Grace	New York	933
286.	Detroit Edison	Detroit	925
287.	Triangle Industries	New York	917
288.	Deseret Mutual Benefit	Salt Lake City	911
289.	ICMA Retirement	Washington	903
290.	Boise Cascade	Boise, Idaho	901
291.	Ethyl	Richmond, Va.	900
292.	Operating Engineers	Pasadena, Calif.	900
293.	Manville	Denver	896
294.	Insurance-Supp. Org.	New York	894
295.	Middle South Utilities	New Orleans	894
296.	Norfolk Southern	Roanoke, Va.	891
297.	Mass. Institute of Tech.	Cambridge	888
298.	Consumers Power	Jackson, Mich.	882
299.	Arizona Public Safety	Phoenix	874
300.	Northern States Power	Minneapolis	873
301.	Westvaco	New York	872
302.	YMCA Retirement	New York	870
303.	Chicago Transit	Chicago	861
304.	Lutheran Church/Amer.	Minneapolis	860
305.	LTV	Dallas	859
306.	May Department Stores	St. Louis	859
307.	Dana	Toledo, Ohio	858
308.	Marsh & McLennan	New York	857
309.	General Mills	Minneapolis	847
310.	Ashland Oil	Ashland, Ky.	846
311.	Consolidated Rail	Philadelphia	841
312.	Control Data	Minneapolis	834
313.	Hoffman-Laroche	Nutley, N.J.	830
314.	Armstrong World	Lancaster, Pa.	829
315.	BASF	Parsippany, N.J.	829
316.	CSX	Richmond, Va.	828
317.	Aramco Services	Houston	825
318.	Borg-Warner	Chicago	825
319.	Nebraska State	Lincoln	821
320.	PepsiCo	Purchase, N.Y.	819
321.	Cincinnati Retirement	Cincinnati	817
322.	Owens Corning	Toledo, Ohio	813
323.	Weyerhaeuser	Tacoma, Wash.	810
324.	Laborers' Nat'l Pension	Dallas	800
325.	USG	Chicago	800
326.	Niagara Mohawk Power	Syracuse, N.Y.	799
327.	Colt Industries	New York	790
328.	Southland	Dallas	789
329.	Norfolk	Norfolk, Va.	785
330.	Northeast Utilities	Hartford, Conn.	783
331.	Amer. Nat'l Red Cross	Alexandria, Va.	780
332.	Minneapolis Employees	Minneapolis	779
333.	Orange County	Santa Ana, Calif.	775
334.	Centerior Energy	Independence, Ohio	772
335.	Reynolds Metals	Richmond, Va.	769
336.	R.R. Donnelley	Chicago	769
337.	Georgia-Pacific	Atlanta	766
338.	Wayne County	Detroit	765
339.	Enron	Houston	761
340.	Coca-Cola	Atlanta	758
341.	Lutheran Church-Mo.	St. Louis	754
342.	Singer	Stamford, Conn.	748
343.	Consol. Natural Gas	New York	744
344.	Air Products	Allentown, Pa.	742
345.	San Diego County	San Diego	740
346.	IC Industries	Chicago	739
347.	Squibb	Princeton, N.J.	738
348.	Allied Stores	New York	737
349.	Masters, Mates	Linthicum Hgts., Md.	737
350.	Federal Retirement	Washington	736
351.	Painters International	Washington	734
352.	Pillsbury	Minneapolis	733
353.	Quaker Oats	Chicago	732
354.	Capital Cities/ABC	New York	725
355.	Polaroid	Cambridge, Mass.	725
356.	Morton Thiokol	Chicago	721
357.	Alameda County	Oakland, Calif.	720
358.	Kellogg	Battle Creek, Mich.	719
359.	Bayer USA	Pittsburgh	714
360.	Burlington Industries	Greensboro, N.C.	713
361.	Teamsters, Central Pa.	Reading, Pa.	713
362.	Liberty Mutual	Boston	711
363.	Baxter Travenol	Deerfield, Ill.	710
364.	San Diego City	San Diego	705
365.	Contel	Atlanta	700
366.	N.J. Hospital Assoc.	Princeton, N.J.	700
367.	San Jose City	San Jose, Calif.	700
368.	Dominion Resources	Richmond, Va.	697
369.	Borden	New York	694
370.	MBTA	Boston	690
371.	A.J. Bayless Markets	Phoenix	688
372.	Nat'l Automatic Sprinkler	Landover, Md.	688
373.	Central and South West	Dallas	684
374.	Virginia Power	Richmond, Va.	684
375.	Amax	Greenwich, Conn.	682
376.	Anheuser-Busch	St. Louis	680
377.	Campbell Soup	Camden, N.J.	679
378.	Ingersoll-Rand	Woodcliff Lake, N.J.	677
379.	General Signal	Stamford, Conn.	667
380.	Milwaukee County	Milwaukee	666
381.	S. Bernardino County	San Bernardino, Cal.	660
382.	Farmland Industries	Kansas City, Mo.	658
383.	Dallas City Employees	Dallas	657
384.	U.S. Air	Washington	657
385.	Pennsylvania Power	Allentown, Pa.	655
386.	Sacramento County	Sacramento, Calif.	655
387.	Winn-Dixie Stores	Jacksonville, Fla.	653
388.	Beatrice	Chicago	650
389.	Blue Cross/Blue Shield	Chicago	650
390.	Baltimore G&E	Baltimore	649
391.	Mars	McLean, Va.	642
392.	Motion Picture Industry	Studio City, Calif.	641
393.	Parsons	Pasadena, Calif.	640
394.	Kaiser Aluminum	Oakland, Calif.	636
395.	Central Pa. Teamsters	Wyomissing, Pa.	635
396.	Contra Costa County	Martinez, Calif.	635
397.	Peoples Energy	Chicago	631
398.	Dayton Hudson	Minneapolis	630
399.	Gillette	Boston	630
400.	Time	New York	630
401.	White Consolidated	Cleveland	630
402.	Op. Eng., 3	San Francisco	628
403.	Teamsters Local 710	Chicago	626
404.	Denver Public School	Denver	620
405.	Hanson Industries	Iselin, N.J.	618
406.	Baltimore County	Towson, Md.	617
407.	Primark	Detroit	614
408.	Principal Mutual	Des Moines, Iowa	613
409.	Harris	Melbourne, Fla.	607
410.	Food/Comm., Nat'l	Washington	604
411.	Budd	Troy, Mich.	601
412.	Household International	Prospect Heights, Ill.	601
413.	Emhart	Hartford, Conn.	600
414.	Longshoremen	New York	599
415.	City Investing	New York	596
416.	Washington Post	Washington	592
417.	Graphic Commun.	Washington	590
418.	Security National	Sioux City, Iowa	590
419.	Fairfax County	Fairfax, Va.	587
420.	Teamsters Local 705	Chicago	587
421.	Marriott	Bethesda, Md.	586
422.	ICI Americas	Wilmington, Del.	581
423.	Ohio Edison	Akron, Ohio	580
424.	Schering-Plough	Madison, N.J.	580
425.	Cincinnati Bell	Cincinnati	579
426.	Brunswick	Skokie, Ill.	578
427.	Memphis City	Memphis	578
428.	Kroger	Cincinnati	577
429.	Goldman Sachs	New York	576
430.	Op. Eng., Ohio	Columbus	576
431.	Sara Lee	Chicago	576
432.	Arthur Andersen	Chicago	575
433.	Elec. Wrkrs., Nat'l HQ	Washington	573
434.	Carpenters District	New York	570
435.	Gannett	Arlington, Va.	570
436.	Christian Church	Indianapolis	568
437.	Svc. Empl., 32B/32J	New York	567
438.	AMP	Harrisburg, Pa.	565
439.	Varian Associates	Palo Alto, Calif.	564
440.	McGraw-Hill	New York	560
441.	Op. Eng., 150	Countryside, Ill.	560
442.	Emerson Electric	St. Louis	557
443.	UFCW Unions	Atlanta	557
444.	Laborers' & Retirement	Chicago	554
445.	Phelps Dodge	New York	554
446.	Battelle Memorial	Columbus, Ohio	551
447.	Sundstrand	Rockford, Ill.	551
448.	Coastal	Houston	550
449.	Timken	Canton, Ohio	550
450.	Food/Comm., 27	Baltimore	548
451.	Lumber Production	Portland, Ore.	548
452.	Mead	Dayton, Ohio	548
453.	De Luxe Check Printers	St. Paul, Minn.	547
454.	Teamsters, Philadelphia	Philadelphia	545
455.	Houston Industries	Houston	544
456.	Iron Workers, Calif.	San Marino, Calif.	544
457.	Typographical Union	Colo. Springs, Colo.	543
458.	Vermont State	Montpelier	543
459.	Louisiana School	Baton Rouge, La.	538
460.	Aerospace	El Segundo, Calif.	537
461.	Montgomery County	Rockville, Md.	536
462.	Tektronix	Beaverton, Ore.	536
463.	Amer. Fed./Musicians	New York	531
464.	Boston City	Boston	531
465.	H.J. Heinz	Pittsburgh	530
466.	Electrical Products Ind.	Flushing, N.Y.	529
467.	Wisconsin Electric	Milwaukee	528
468.	NL Industries	New York	526
469.	Colorado Fire & Police	Englewood, Colo.	525
470.	Container Corp.	Chicago	521
471.	New England Electric	Westborough, Mass.	520
472.	Navy Resale System	Staten Island, N.Y.	518
473.	CPC International	Englewd. Cl., N.J.	514

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets
474.	Mo. Local Government	Jefferson City	514
475.	Laborers' Welfare	Chicago	510
476.	Longshoremen, ILWU	San Francisco	510
477.	New York State Electric	Ithaca, N.Y.	510
478.	San Diego G&E	San Diego	510
479.	Graphic Arts Local 458	Chicago	507
480.	Milliken	Spartanburg, S.C.	502
481.	Norton	Worcester, Mass.	502
482.	Wickes	Santa Monica, Calif.	502
483.	City of Jacksonville	Jacksonville, Fla.	501
484.	Allegheny Power	New York	500
485.	B.F. Goodrich	Akron, Ohio	500
486.	Denver Firemen	Denver	500
487.	Laborers Pension Fund	Chicago	500
488.	Mitre	Bedford, Mass.	500
489.	Union Camp	Wayne, N.J.	500
490.	Uniroyal Goodrich	Akron, Ohio	500
491.	Combustion Engineering	Stamford, Conn.	498
492.	Florida Progress	St. Petersburg, Fla.	498
493.	Screen Actors Guild	Burbank, Calif.	493
494.	Wheeling-Pitt	Wheeling, W. Va.	493
495.	Johnson Controls	Milwaukee	492
496.	Sandoz	New York	490
497.	Baker Hughes	Houston	488
498.	Carolina P&L	Raleigh, N.C.	488
499.	Communication Wrkrs.	Colo. Springs, Colo.	486
500.	F.W. Woolworth	New York	485
501.	Minnesota Nurses	St. Paul, Minn.	482
502.	Union Electric	St. Louis	482
503.	Avon Products	New York	481
504.	Inter-Local Pension	Chicago	478
505.	Premark Int'l	Deerfield, Ill.	478
506.	Stone & Webster	New York	473
507.	Uniroyal	Middlebury, Conn.	473
508.	Cincinnati Gas	Cincinnati	472
509.	Seattle Employees	Seattle	470
510.	Printing Pressmen	Los Angeles	469
511.	Steelcase	Grand Rapids, Mich.	465
512.	Firestone Tire	Akron, Ohio	463
513.	Teamster Affiliates	Washington	462
514.	Walgreen	Deerfield, Ill.	462
515.	State Farm Insurance	Bloomington, Ill.	460
516.	Joseph E. Seagram	New York	458
517.	National Distillers	New York	458
518.	Inter-American Develop.	Washington	454
519.	Maytag	Newton, Iowa	454
520.	Primerica	Greenwich, Conn.	454
521.	Lever Brothers	New York	453
522.	McKesson	San Francisco	453
523.	Wal-Mart Stores	Bentonville, Ark.	453
524.	Koppers	Pittsburgh	451
525.	Laborers, Construction	Forest Park, Ill.	451
526.	Alaska Teamsters, 959	Anchorage, Alaska	450
527.	Dresser	Dallas	450
528.	Laborers Int'l HQ	Washington	450
529.	Laborers, S. Calif.	Los Angeles	449
530.	Op. Engineers, 324	Birmingham, Mich.	449
531.	Hoechst-Celanese	New York	448
532.	Paper Industry	Nashville	447
533.	Cargill	Minneapolis	445
534.	Sherwin-Williams	Cleveland	445
535.	Carter Hawley Hale	Los Angeles	444
536.	Briggs & Stratton	Milwaukee	443
537.	MEBA, District 2	Brooklyn	441
538.	Chicago Carpenters	Chicago	440
539.	R.H. Macy	New York	437
540.	Northern Ill. Gas	Aurora, Ill.	435
541.	A.O. Smith	Milwaukee	434
542.	Food/Comm. Butchers	Oakland, Calif.	434
543.	Carpenter Technology	Reading, Pa.	433
544.	Hospital Corp.	Nashville	433
545.	Carpenters, Council	Chicago	432
546.	Arizona Public Service	Phoenix	431
547.	Peat Marwick Main	New York	430
548.	Texas Eastern	Houston	430
549.	Panhandle Eastern	Houston	429
550.	Dallas Police & Fire	Dallas	428
551.	Tribune	Chicago	428
552.	Fresno County	Fresno, Calif.	427
553.	Perkin-Elmer	Norwalk, Conn.	427
554.	Atlantic City Electric	Pleasantville, N.J.	426
555.	Teamsters, N.Y. State	Utica, N.Y.	426
556.	Lear Siegler	Santa Monica, Calif.	425
557.	Mercantile Stores	New York	425
558.	Roadway Services	Akron, Ohio	422
559.	Hammermill Paper	Erie, Pa.	421
560.	Teamsters, West. Pa.	Pittsburgh	420
561.	UNC	Annapolis, Md.	420
562.	S. Calif. Rapid	Los Angeles	419
563.	Fort Worth Employees	Fort Worth, Texas	411
564.	Johnson & Higgins	New York	409
565.	Endata	Nashville	407
566.	Becton, Dickinson	Franklin Lakes, N.J.	406
567.	Amer. Home Products	New York	405
568.	Asarco	New York	404
569.	AFTRA	New York	400
570.	Arthur D. Little	Cambridge, Mass.	400
571.	Denver Employees	Denver	400
572.	Henley Group	La Jolla, Calif.	400
573.	J.P. Stevens	New York	400
574.	Minneapolis Teachers	Minneapolis	400
575.	J.M. Huber	Edison, N.J.	399
576.	Rohr Industries	Chula Vista, Calif.	399
577.	Piedmont Aviation	Winston-Salem, N.C.	398
578.	Boston Edison	Boston	396
579.	Springs Industries	Fort Mill, S.C.	396
580.	Williams Cos.	Tulsa, Okla.	396
581.	Atlanta General Empl.	Atlanta	393
582.	Cincinnati Milacron	Cincinnati	393
583.	Amalg. Cotton Garment	New York	385
584.	Carpenters, Detroit	Detroit	385
585.	Reliance Electric	Cleveland	385
586.	Food/Comm. Wrks.	Los Angeles	384
587.	Kern County	Bakersfield, Calif.	384
588.	Elec. Workers, S. Calif.	Los Angeles	383
589.	Bell Communications	Livingston, N.J.	382
590.	Centel	Chicago	382
591.	Lowe's Cos.	N. Wilkesboro, N.C.	382
592.	Directors Guild of Amer.	Los Angeles	379
593.	Food/Comm., 174	New York	379
594.	Carpenters, Cleveland	Clevland	378
595.	Seafarers	Camp Springs, Md.	378
596.	Hwy./Transportation	Jefferson City, Mo.	377
597.	Reader's Digest	Pleasantville, N.Y.	377
598.	Sheet Metal Wrks., 10	Los Angeles	376
599.	American Motors	Southfield, Mich.	375
600.	Ventura County	Ventura, Calif.	375
601.	Clark Equipment	Buchanan, Mich.	373
602.	Transco Energy	Houston	373
603.	Elec. Workers, 154	Anchorage, Alaska	372
604.	Long Island Light.	Hicksville, N.Y.	370
605.	Anchor Hocking	Lancaster, Ohio	369
606.	Memphis Light	Memphis	369
607.	Amstar	New York	367
608.	First Asset	Minneapolis	367
609.	McKinsey	New York	367
610.	Gulf & Western	New York	366
611.	Hartford City	Hartford, Conn.	366
612.	Plumbers, 16	Los Angeles	366
613.	Public Service Colo.	Denver	366
614.	Pitney Bowes	Stamford, Conn.	365
615.	Brooklyn Union Gas	Brooklyn	363
616.	Ernst & Whinney	Cleveland	363
617.	Alexander & Alexander	Baltimore	361
618.	Automotive Ind.	Oakland, Calif.	361
619.	Enserch	Dallas	360
620.	Hershey Food	Hershey, Pa.	360
621.	UFCW, Midwest	Chicago	360
622.	Bldg. Trades United	Milwaukee	358
623.	Belk/Leggett	Charlotte, N.C.	357
624.	Plumbers, 597	Chicago	357
625.	Food/Comm., 876	Madison Hgts., Mich.	356
626.	Int'l Minerals	Mundelein, Ill.	355
627.	Champion Spark Plug	Toledo, Ohio	353
628.	Flint City	Flint, Mich.	352
629.	Rochester Gas	Rochester, N.Y.	352
630.	Nat'l Telephone Co-op	Washington	350
631.	Andersen	Bayport, Minn.	349
632.	Boy Scouts of Amer.	Irving, Texas	349
633.	Pennwalt	Philadelphia	349
634.	Longshoremen	Baltimore	348
635.	Nat'l Maritime Union	New York	346
636.	Federal Express	Memphis	345
637.	Loews	New York	345
638.	S.C. Johnson	Racine, Wis.	344
639.	Bank of New York	New York	343
640.	Major League Players	New York	343
641.	Nalco Chemical	Naperville, Ill.	343
642.	Revlon	New York	342
643.	Delmarva Power	Wilmington, Del.	341
644.	Square D	Palatine, Ill.	341
645.	Nat'l Industrial	Newark, N.J.	339
646.	Gates Rubber	Denver	338
647.	Potlatch	San Francisco	338
648.	Rapid-American	New York	337
649.	Chicago Firemen	Chicago	336
650.	Vulcan Materials	Birmingham, Ala.	336
651.	Hotel & Restaurant, 165	Las Vegas	335
652.	Western Metal Ind.	Seattle	335
653.	Sonat	Birmingham, Ala.	334
654.	Baton Rouge City	Baton Rouge, La.	333
655.	Potomac Electric	Washington	333
656.	Agway	Syracuse, N.Y.	332
657.	San Mateo County	Redwood City, Calif.	332
658.	Gerber Products	Fremont, Mich.	330
659.	Bricklayers/Trowel	Washington	328
660.	Commerce Clearing	Chicago	328
661.	Amerada Hess	New York	327
662.	Trinova	Toledo, Ohio	327
663.	Philadelphia Carpenters	Philadelphia	326
664.	Auto Workers, 65	New York	325
665.	Flying Tiger	Los Angeles	325
666.	Great Northern Nekoosa	Stamford, Conn.	325
667.	Washington Gas Light	Washington	324
668.	Laborers, Ohio	Columbus	322
669.	Alco Standard	Wayne, Pa.	321
670.	N. Dakota Teachers	Bismarck	321
671.	Northern Telecom	Nashville	321
672.	Burroughs Wellcome	Research Tri., N.C.	320
673.	San Joaquin County	Stockton, Calif.	320
674.	Sterling Drug	New York	320
675.	Laborers, 341/942/133	Seattle	319
676.	Maritime Association	Houston	317
677.	Equifax	Atlanta	316
678.	V F Corp.	Reading, Pa.	316
679.	Carnation	Los Angeles	315
680.	Gulf States Utilities	Beaumont, Texas	314
681.	Armtek	New Haven, Conn.	313
682.	Elec. Contractors, 134	Chicago	313
683.	Hearst	New York	313
684.	N. Calif. Sheetmetal	San Francisco	313
685.	Tampa Fire/Police	Tampa, Fla.	311
686.	Boc Group	Montvale, N.J.	310
687	St. Louis Public School	St. Louis	310
688.	Firemen's Fund	Novato, Calif.	309
689.	Miami Employees	Miami	309
690.	Sacramento City	Sacramento, Calif.	308
691.	Western Union	Up. Sad. River, N.J.	308
692.	EG&G	Wellesley, Mass.	307
693.	Mass. Carpenters	Burlington, Mass.	307
694.	Chesebrough-Pond's	Greenwich, Conn.	305
695.	Austin City	Austin, Texas	304
696.	Arlington County	Arlington, Va.	302
697.	Knight-Ridder	Miami	302
698.	Nestle	Purchase, N.Y.	302
699.	Capital Holding	Louisville, Ky.	301
700.	Blue Cross/Blue Shield	Des Moines, Iowa	300
701.	Jim Walter	Tampa, Fla.	300
702.	Marion Labs	Kansas City, Mo.	300
703.	McDonald's	Oak Brook, Ill.	300
704.	Nat'l Football League	New York	300
705.	Phoenix Employees	Phoenix	300
706.	Stanley Works	New Britain, Conn.	300
707.	Dan River	Danville, Va.	299
708.	N.Y. Cultural	New York	299
709.	Oklahoma G&E	Oklahoma City	299
710.	Consolidated Papers	Wis. Rapids, Wis.	297
711.	Brockway (NY)	Jacksonville, Fla.	296
712.	Sanitary District	Chicago	296
713.	Cleveland-Cliffs	Cleveland, Ohio	294
714.	Norfolk City Employees	Norfolk, Va.	292
715.	Royal Insurance	Charlotte, N.C.	292
716.	Amer. Nat'l Can	Chicago	291
717.	Laborers, Mason	New York	290
718.	North Dakota Public	Bismarck, N.D.	290
719.	Outboard Marine	Waukegan, Ill.	290
720.	Op. Eng., 15	New York	289
721.	Zenith Electronics	Chicago	289
722.	CBI Industries	Oak Brook, Ill.	288
723.	Fresno City	Fresno, Calif.	288
724.	Publix Super Markets	Lakeland, Fla.	288
725.	Missouri Highway	Jefferson City, Mo.	287
726.	Cyclops	Pittsburgh	286
727.	Food & Comm., 455	Houston	285
728.	Fort Howard	Green Bay, Wis.	285
729.	Amsted Industries	Chicago	283
730.	Cozen & O'Conner	Philadelphia	283
731.	Carpenters, W. Wash.	Seattle	282
732.	N. Ind. Public Service	Hammond, Ind.	282
733.	Bldg. Service Pension	San Francisco	281
734.	Mass. Laborers	Newton, Mass.	280
735.	Interco	St. Louis	279
736.	Iron Workers	Charleston, W. Va.	279
737.	Op. Eng., 82	Newark, N.J.	279
738.	Paine Webber	New York	278
739.	Plasterers/Cement	El Monte, Calif.	277
740.	Litho./Photoengrave	Washington	276
741.	Children's Med. Center	Boston	275
742.	Lone Star	Dallas	275
743.	Machinists, Nat'l HQ	Washington	275
744.	AMCA Int'l	Hanover, N.H.	274
745.	First Boston	New York	274
746.	Charter	Jacksonville, Fla.	273

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets
747.	Producer-Writers	Burbank, Calif.	273
748.	Rochester Telephone	Rochester, N.Y.	273
749.	Auto Workers, Nat'l HQ	Detroit	272
750.	Plumbers Local 525	Las Vegas	272
751.	Levi Strauss	San Francisco	270
752.	Graybar Electric	St. Louis	269
753.	TPF&C	Philadelphia	269
754.	Elf Aquitaine	Stamford, Conn.	268
755.	Hawaiian Electric	Honolulu	268
756.	Rexnord	Brookfield, Wis.	268
757.	Salt River Project	Phoenix	268
758.	Federal-Mogul	Detroit	267
759.	Blue Cross/Blue Shield	Southfield, Mich.	266
760.	Conagra	Omaha, Neb.	266
761.	Joy Manufacturing	Pittsburgh	265
762.	Santa Barbara County	Santa Barbara, Calif.	265
763.	Steelworkers, Nat'l HQ	Pittsburgh	265
764.	Arthur Young U.S.	New York	264
765.	Pacific P&L	Portland, Ore.	264
766.	Salomon Brothers	New York	263
767.	Greater Cleve. Hosp.	Cleveland	261
768.	Upholsterers, Int'l HQ	Philadelphia	260
769.	Carpenters, Int'l HQ	Washington	259
770.	St. Paul Teachers	St. Paul, Minn.	259
771.	Kansas P&L	Topeka, Kan.	258
772.	Allis-Chalmers	Milwaukee	256
773.	Gould	Rolling Meadows, Ill.	256
774.	Pechiney	Greenwich, Conn.	256
775.	Sybron	Saddle Brook, N.J.	256
776.	Texas Gas Trans.	Greensboro, Ky.	256
777.	Chicago Park Empl.	Chicago	255
778.	City of Kansas	Kansas City	254
779.	Carpenters, Ill.	Geneva, Ill.	253
780.	Daniel Int'l	Greenville, S.C.	253
781.	Hotel & Restaurant	Chicago	253
782.	Southwestern Public	Amarillo, Texas	253
783.	Allegheny Int'l	Pittsburgh	252
784.	Masonite	Chicago	252
785.	Laborers, 341	Anchorage, Alaska	251
786.	Pickands Mather	Cleveland	251
787.	Arvin Industries	Columbus, Ind.	250
788.	Harcourt Brace	Orlando, Fla.	250
789.	Ohio Casualty	Hamilton, Ohio	250
790.	Equity-League Pension	New York	249
791.	Farley Industries	Chicago	249
792.	Central Beef	N'dham Hts., Mass.	248
793.	Hersey Products	Cleveland	248
794.	American Water	Haddon Hgts., N.J.	247
795.	GATX	Chicago	247
796.	Laborers, Western Pa.	Pittsburgh	246
797.	Peabody Holding	St. Louis, Mo.	246
798.	Wichita City	Wichita, Kan.	246
799.	Iron Wrkrs., No. N.J.	Newark, N.J.	245
800.	Iron Workers, S. Ohio	Dayton	245
801.	Amfac	San Francisco	244
802.	Parker-Hannifin	Cleveland	244
803.	Wis. Public Service	Green Bay	244
804.	Combined Insurance	Chicago	243
805.	Illinois Power	Decatur, Ill.	243
806.	Fairchild Industries	Chantilly, Va.	242
807.	Aon	Chicago	241
808.	American Insurance	New York	240
809.	Marmon Group	Chicago	240
810.	New York Times	New York	240
811.	Penn Central	Greenwich, Conn.	240
812.	Portland Gen'l Electric	Portland, Ore.	240
813.	Tecumseh Products	Tecumseh, Mich.	240
814.	Babcock Industries	Fairfield, Conn.	239
815.	Electronic Data Systems	Dallas	239
816.	Puget Sound Power	Bellevue, Wash.	238
817.	Great Lakes Carbon	Briarcliff Manor, N.Y.	237
818.	Arkla	Shreveport, La.	236
819.	Kerr-McGee	Oklahoma City	236
820.	Food/Comm., 1001	Bellevue, Wash.	235
821.	Iron Wrkrs., 40/361/417	New York	235
822.	ONEOK	Tulsa	235
823.	Texas Iron Workers	Houston	235
824.	United Svcs. Auto	San Antonio, Texas	234
825.	Oakland County	Pontiac, Mich.	233
826.	NVF	Miami Beach	231
827.	Arkansas State Highway	Little Rock	230
828.	South Carolina Electric	Columbia, S.C.	229
829.	St. Louis Employees	St. Louis	227
830.	S. Calif. Permanente	Pasadena, Calif.	227
831.	Utah Power & Light	Salt Lake City	227
832.	Marin County	San Rafael, Calif.	226
833.	Teco Energy	Tampa, Fla.	226
834.	Continental Grain	New York	225
835.	Pittston	Greenwich, Conn.	225
836.	San Antonio Firemen	San Antonio, Texas	225
837.	Iron Workers, 25	Novi, Mich.	224
838.	William Wrigley	Chicago	224
839.	Machinists, Automotive	Seattle	223
840.	Witco	New York	223
841.	Food/Comm., 7	Wheat Ridge, Colo.	222
842.	Heavy & Gen'l Laborers	Newark, N.J.	222
843.	Machinists, Dist. 9	Bridgeton, Mo.	222
844.	Simpson Investment	Seattle	222
845.	St. Louis Police	St. Louis	221
846.	Dynacast	Yorktown Hgts., N.Y.	220
847.	Iron Workers/Texas	Houston	220
848.	Michigan State Univ.	East Lansing	219
849.	Org. Amer. States	Washington	219
850.	Tandy/Radio Shack	Fort Worth, Texas	219
851.	Food/Comm., 576	Kansas City, Mo.	218
852.	Teamsters, 282	Elmont, N.Y.	218
853.	Dow Jones	Princeton, N.J.	217
854.	Heublein	Farmington, Conn.	217
855.	Oakland Municipal	Oakland, Calif.	216
856.	Shelby County	Memphis	216
857.	Indianapolis Power	Indianapolis	215
858.	Laborers, 472/172	Newark, N.J.	215
859.	Plumbers, 444/159/342	San Francisco	215
860.	Sealed Power	Muskegon, Mich.	215
861.	Adolph Coors	Golden, Colo.	214
862.	Kansas City P&L	Kansas City, Mo.	212
863.	Nat'l Starch & Chem.	Bridgewater, N.J.	212
864.	Vassar College	Poughkeepsie, N.Y.	212
865.	MAPCO	Tulsa	211
866.	Foxboro	Foxboro, Mass.	210
867.	Signode	Glenview, Ill.	210
868.	Syntex	Palo Alto, Calif.	210
869.	BBDO Int'l	New York	209
870.	Knoxville Employees	Knoxville, Tenn.	209
871.	A.G. Edwards	St. Louis,	208
872.	Bowater	Darien, Conn.	208
873.	Elec. Workers, 332	San Jose, Calif.	208
874.	Humana	Louisville, Ky.	208
875.	Ill. Tool Works	Chicago	208
876.	Interlake	Oak Brook, Ill.	207
877.	Omaha Public Power	Omaha, Neb.	207
878.	SKF Industries	King of Prussia, Pa.	207
879.	Duquesne Light	Pittsburgh	206
880.	U.S. Borax/Chemical	Los Angeles	206
881.	Birmingham City	Birmingham, Ala.	205
882.	Grand Rapids City	Grand Rapids, Mich.	205
883.	Pennsylvania Municipal	Harrisburg, Pa.	203
884.	Siemens Capital	New York	203
885.	Thomas J. Lipton	Englewood Clf., N.J.	203
886.	Carpenters, W. Pa.	Pittsburgh	202
887.	Dekalb Employees	Decatur, Ga.	202
888.	K.C. Public Schools	Kansas City, Mo.	202
889.	Morrison Knudsen	Boise, Idaho	201
890.	Cox Enterprises	Atlanta	200
891.	Harsco	Camp Hill, Pa.	200
892.	Nashville/Davidson Co.	Nashville, Tenn.	200
893.	National Fuel Gas	Buffalo, N.Y.	200
894.	Plumbers, 638/Steam.	Long Island, N.Y.	200
895.	Sisters of Mercy	Farm'ton Hills, Mich.	200
896.	Alcan Aluminum	Cleveland	199
897.	Black & Decker (U.S.)	Towson, Md.	199
898.	Torchmark	Birmingham, Ala.	199
899.	Laborers Local 731	New York	198
900.	Smith Int'l	Newport Beach, Cal.	198
901.	Textile Workers Nat'l	New York	198
902.	Banco Popular	Hat Rey, P.R.	197
903.	Iron Workers Locals	Seattle	197
904.	Newmont Mining	New York	197
905.	Dennison Mfg.	Waltham, Mass.	195
906.	Figgie Int'l	Richmond, Va.	195
907.	Indiana Farmers Mutual	Indianapolis	195
908.	Moorman Mfg.	Quincy, Ill.	195
909.	Brown-Forman	Louisville, Ky.	194
910.	Amica Mutual	Providence, R.I.	193
911.	PACCAR	Bellevue, Wash.	193
912.	Yellow Freight System	Overland Park, Kan.	193
913.	Auto. Club of S. Calif.	Los Angeles	192
914.	Diversified Energies	Minneapolis	192
915.	Engelhard	Edison, N.J.	191
916.	New Orleans Steamship	New Orleans	191
917.	TBG	New York	191
918.	Castle & Cooke	Los Angeles	190
919.	Chubb	Warren Town., N.J.	189
920.	Kaiser Northwest	Portland, Ore.	189
921.	Commonwealth Energy	Cambridge, Mass.	188
922.	Dillon Cos.	Hutchinson, Kan.	188
923.	Dravo	Pittsburgh	188
924.	Rubbermaid	Wooster, Ohio	188
925.	St. Joe Minerals	Clayton, Mo.	188
926.	United Brands	New York	187
927.	Auto. Club of S. Calif.	Los Angeles	186
928.	Calif. State Auto.	San Francisco	186
929.	Copley Press	La Jolla, Calif.	186
930.	Firemen's Retirement	St. Louis	185
931.	Roofers	Washington	185
932.	Stanislaus County	Modesto, Calif.	185
933.	Vetco Gray	Houston	185
934.	Wisconsin Gas	Milwaukee	185
935.	YWCA Retirement	New York	185
936.	Hiram Walker & Sons	Detroit	184
937.	Laborers, 253	Jacksonville, Ill.	184
938.	Masco	Taylor, Mich.	184
939.	Teamsters Joint, 83	Richmond, Va.	184
940.	Thomson McKinnon	New York	184
941.	White Castle System	Columbus, Ohio	184
942.	Bell & Howell	Skokie, Ill.	183
943.	Central Ill. Light	Peoria	183
944.	Willamette Industries	Portland, Ore.	183
945.	Blue Cross of Mass.	Boston	182
946.	Brown Group	St. Louis	182
947.	N'western Steel/Wire	Sterling, Ill.	182
948.	Tacoma Employees	Tacoma, Wash.	182
949.	Fruehauf	Detroit	181
950.	Painters District, 2	San Francisco	181
951.	Tulare County	Visalia, Calif.	181
952.	Laborers District Council	Great Falls, Mont.	180
953.	League of Vol. Hospitals	New York	180
954.	Science Applications	San Diego	180
955.	St. Louis Firemen	St. Louis	180
956.	Teamsters Mid-Jersey	N. Brunswick, N.J.	180
957.	Dayton Power	Dayton, Ohio	179
958.	Elec. Workers, 1186	Honolulu	178
959.	Kimball Int'l	Jasper, Ind.	178
960.	Carpenters District	Union, N.J.	177
961.	Elec. Workers, 3	East Rutherford, N.J.	177
962.	Longview Fibre	Longview, Wash.	177
963.	Pacific Maritime	San Francisco	177
964.	Data General	Westborough, Mass.	176
965.	Mine Safety Appliance	Pittsburgh	176
966.	Reserve Mining	Silver Bay, Minn.	176
967.	Limited Stores	Columbus, Ohio	175
968.	Richmond Supplemental	Richmond, Va.	175
969.	Scovill	Waterbury, Conn.	175
970.	Stanadyne	Windsor, Conn.	175
971.	Deloitte, Haskins	New York	174
972.	A.E. Staley	Rolling Meadows, Ill.	173
973.	Cluett, Peabody	New York	171
974.	Commercial Credit	Baltimore	170
975.	Ironworkers District	Philadelphia	170
976.	Lincoln Electric	Cleveland	170
977.	Archer Daniels Midland	Decatur, Ill.	169
978.	Land-O-Lakes	Arden Hills, Minn.	169
979.	Lubrizol	Wickliffe, Ohio	169
980.	Teamsters North Jersey	Union City, N.J.	169
981.	American Greetings	Cleveland	168
982.	Barnes Group	Bristol, Conn.	168
983.	Jack Eckerd	Largo, Fla.	168
984.	Kaneb Services	Houston	167
985.	Media General	Richmond, Va.	167
986.	Plumbers/Steam., 420	Philadelphia	167
987.	Food/Comm., 464	Little Falls, N.J.	166
988.	Koch Industries	Wichita, Kan.	166
989.	Laborers District Council	Lansing, Mich.	166
990.	Lucky Stores	Dublin, Calif.	166
991.	MCA	Universal City, Calif.	166
992.	National Gypsum	Dallas	66
993.	PSA	San Diego	166
994.	Food/Comm., 555	Tigard, Ore.	165
995.	Mercedes Benz	Montvale, N.J.	165
996.	Omaha School Empl.	Omaha	165
997.	Hotel Trades Council	New York	164
998.	Nat'l Gallery of Art	Washington	164
999.	Oper. Eng. Locals	Syracuse, N.Y.	164
1000.	Public Service/N.M.	Albuquerque, N.M.	164

On the following pages, *Pensions & Investment Age* presents sketches of the nation's 200 largest pension funds. The profiles include the funds' asset allocation, investment managers and key personnel. All information is ©1988 Crain Communications Inc.

A

Abbott Laboratories

	($ millions)
Total assets	1,680
Defined benefit	800
Defined contribution	880
Employer contributions	16
Benefit payments	19
In-house assets	300
Asset mix:	
Stocks	50%
Bonds	50%

ABBOTT PARK, Ill. — Abbott Laboratories' total benefit assets increased 44.8% in the year ended Sept. 30 to $1.68 billion from $1.16 billion. Defined benefit assets increased 35.6% to $800 million from $590 million, while defined contribution assets grew 54.4% to $880 million from $570 during the same period.

Equity managers: Jennison; RCM; Hagler Mastrovita & Hewitt; Froley Revy.

Fixed-income managers: RCM.

The master custodian is Continental Bank.

A.G. Olsen, director-employee financial programs, oversees investment management of the fund.

Aetna Life & Casualty Co.

	($ millions)
Total assets	2,294
Defined benefit	1,537
401(k)	733
IRAs	24
Employer contributions	35
Benefit payments	42
Portfolio insurance	82
In-house assets:	
Equities	869
Fixed income	390
Short term	7
Other	271
Passive investments:	
GICs	390
Alternative investments:	
International equities	65
Real estate equity	78
Mortgages	19
Mortgage-backed securities	8
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	57%
Bonds	7%
Cash equivalents	0.5%
Real estate equity	5%
Mortgages	1%
Mortgage-backed securities	0.5%
GICs	25%
International equity	4%

HARTFORD, Conn. — Aetna Life & Casualty Co.'s total employee benefit assets grew 18.5% to $2.294 billion from $1.936 billion during the year ended Sept. 30. As a result of the crash, domestic stocks were reduced from 56.5% of the pension portfolio to 51.3%, and international stocks dropped from 4.2% to 3.8% as of Nov. 1. The GIC portion, meanwhile rose from 25.4% to 29.7%, and bonds, mortgages, mortgage-backed securities and real estate portions grew slightly.

All Aetna Life's retirement and 401(k) assets are managed by Aetna Capital Management.

The master trustee is Connecticut National Bank.

Key personnel overseeing the investment management of the fund are: D.G. Conrad, executive vice president; P.R. Roberts, senior vice president-financial; and E.F. Kelly, vice president-pension.

Retirement Systems of Alabama

	($ millions)
Total assets*	6,233
Defined benefit	6,233
Employer contributions	276
Benefit payments	258

*book value

In-house assets:	
Equities	946
Fixed income	4,519
Short term	747
Other	21
Passive investments:	
Indexed stocks	602
GICs	13
Alternative investments:	
Private placements	939
Real estate equity	4
Mortgages	968
Mortgage-backed securities	626
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	15.2%
Bonds	46.9%
Cash equivalents	12.1%
Real estate equity	0.1%
Mortgages	15.5%
Mortgage-backed securities	10%
GICs	0.2%

MONTGOMERY, Ala. — Assets of the Retirement Systems of Alabama increased 14.3% for the year ended Sept. 30 to $6.233 billion from $5.454 billion in 1986.

Key personnel overseeing the investment management of the fund are David G. Bronner, chief executive officer; Hunter Reaves, director-fixed income; and Cheryl Duke, director-equities.

State of Alaska Retirement Systems

	($ millions)
Total assets*	3,340
Defined benefit	3,340
Employer contributions	150
Benefit payments	104

*as of June 30, 1987

In-house assets:	
Fixed income	1,553
Short term	260
Alternative investments:	
International equities	332
Real estate equity	196
Mortgages	265
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	40%
Bonds	38%
Cash equivalents	8%
Real estate equity	6%
Mortgages	8%

JUNEAU, Alaska — Assets of the State of Alaska Retirement Systems increased 16.9% for the year ended June 30, to $3.34 billion from $2.857 billion. Although fund officials would not provide specific amounts on assets lost in the October stock market drop, a spokesman said the fund's domestic equity managers were holding cash but speculated the fund did only "10% better than the market" on its equity investments. However, the asset mix was unchanged.

Equity managers (Domestic): Fred Alger; INVESCO; Lehman Management. (International): Citicorp; Morgan Guaranty Trust.

Real estate managers: Aetna; Equitable; JMB; J.P. Morgan; Karsten; and Security Capital.

The master custodian is First Pennsylvania Bank.

Key personnel overseeing the investment management of the fund are James R. Wilson, Kenneth L. Shaffer and Martin Lentz, state investment officers.

Allegis Corp.

	($ millions)
Total assets	3,100
Defined benefit	1,800
Defined contribution	1,100
401(k)	200
Employer contributions	86
Benefit payments	87
Passive investments:	
Indexed stocks	300
Alternative investments:	
Real estate equity	200
Hedging devices:	
Fixed-income futures	Y
Asset mix:	
Stocks	43%
Bonds	35%
Cash equivalents	11%
Real estate equity	11%

CHICAGO — Allegis Corp., formerly UAL Inc., had $3.1 billion in total employee benefit assets as of Sept. 30, an increase of 19.2% from $2.6 billion the previous year. Defined benefit assets increased 12.5% to $1.8 billion as of Sept. 30, up from $1.6 billion a year earlier, while defined contribution plan assets rose 10% to $1.1 billion, up from $1 billion.

Defined benefit assets declined 11.1% to $1.6 billion as of Nov. 1, a result of the market turmoil during October. Asset figures for the defined contribution plan were not available. The asset mix was not altered as a result of the market activity.

Equity managers: Cambiar; First Manhattan; Hotchkis and Wiley; Lincoln; McCowan; Sit; and Weiss, Peck & Greer.

Fixed-income managers: Sanford C. Bernstein; W.R. Huff; J.P. Morgan; and Pacific Investment.

Real estate managers: LaSalle; PMRealty; RREEF.

The master trustee is National Bank of Detroit; the investment consultant is Frank Russell.

The key person overseeing the investment management of the fund is David J. Dykstra, director-pension assets.

Allied-Signal

	($ millions)
Total assets	6,808
Defined benefit	4,808
Thrift or savings/401(k)	2,000
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	500
Fixed income	500
Short term	400
Passive investments:	
Indexed stocks	400
GICs	180
Alternative investments:	
International equities	300
Venture capital	30
Oil and gas	30
LBOs	30
Real estate equity	250
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	56%
Bonds	28%
Cash equivalents	9%
Real estate equity	5%
Other	2%

MORRISTOWN, N.J. — The retirement plan assets at Allied-Signal increased 3.2% to $6.808 billion from $6.6 billion for the year ended Sept. 30.

Defined benefit plan assets, which stood at $4.808 billion Sept. 30 dropped to about $4.1 billion Oct. 30, a decline of 14.7%. The Oct. 19 stock market plunge resulted in an asset allocation of 45% stocks, 35% bonds, 11% cash, 7% real estate equity and 2% other.

Equity managers (Domestic): Bankers Trust; Baron Capital; BMI Capital; Chesapeake Capital; Corinthian Capital; Delaware Investment; Dodge & Cox; Johnson, Valiant & Broadfoot; KR Capital; Kurtz Capital; John A. Levin; Lincoln Capital; Lord Abbett; S Squared; Donald Smith; State Street; Target Investors; Thomson, Horstmann & Bryant; Towneley; Verus Capital; Weiss, Peck & Greer; and Westport Asset Management.

(International): Arnhold & S. Bleichroeder; Batterymarch; and Morgan Grenfell.

Fixed-income managers: Delaware; W.R. Huff; J.P. Morgan; Solomon Asset.

Real estate managers: Aetna; Copley; Hancock; PCA; Prudential; RREEF; TCW; Travelers.

The master trustee is Northern Trust.

Key personnel overseeing the investment management of the fund are Edward T. Tokar Jr., vice president-investments; Mark E. Smith, senior fixed-income portfolio manager and administrator; and Jay W. Burden, manager of fixed-income investments and administrator.

Aluminum Company of America

	($ millions)
Total assets	3,072
Defined benefit	2,703
401(k)	369
Employer contributions	157
Benefit payments	na

**P&I Age* estimate

PITTSBURGH — *Pensions & Investment Age* estimates the Aluminum Co. of America's total plan assets grew 13.7% for the 12 months ended Sept. 30, to $3.072 billion from $2.703 billion.

The estimate is based on December 1986 figures provided by Money Market Directory.

Alcoa would not identify its managers. The list that follows is from the Money Market Directory.

Equity managers: Capital Guardian (domestic and international); Franklin Portfolio; Prudential Asset; and Rosenberg Institutional.

Bond managers: Fischer, Francis, Trees & Watts and STW.

Index managers: State Street Bank and Wells Fargo Investment.

Real estate managers: Coldwell Banker and RREEF.

Venture capital manager: Capital Guardian.

Joseph Pellegrino, assistant treasurer, oversees plan investments.

American Airlines

	($ millions)
Total assets	3,130
Defined benefit	1,600
Defined contribution	1,300
401(k)	200
Other	30
Employer contributions	120
Benefit payments	150
In-house assets:	
Equities	70
Fixed income	780
Short term	50
Passive investments:	
Dedicated/immunized	750
GICs	30
Alternative investments:	
International equities	125
International bonds	50
Mortgage-backed securities	200
Asset mix:	
Stocks	45%
Bonds	47%
Cash equivalents	8%

FORT WORTH, Texas — Total employee benefit assets at American Airlines increased 7.2% in the 12 months ended Sept. 30, to $3.1 billion from $2.892 billion. Because of the market volatility during October, total assets dropped 9.7% to $2.8 billion Nov. 1.

Equity managers: AMR Investment; Atlanta Capital; Barrow, Hanley; Capital Guardian; Dewey Square; Dreman; Ganucheau, Stupfel & Brumley; Hotchkis & Wiley; Independence; United Capital Management.

Balanced managers: AMR Investment; Penmark; First RepublicBank; Barrow, Hanley; Hotchkis & Wiley; Capital Guardian; and Independent.

International managers: Morgan Grenfell; N.M. Rothschild; and Rowe-Price Fleming.

Options manager: Analytic Investments.

The master trustee is First RepublicBank Dallas.

Largest corporate funds
($ millions)

Fund	Assets
General Motors	40,000
AT&T	37,577
General Electric	27,300
IBM	22,457
Ford Motor	19,800
E.I. du Pont de Nemours	16,868
NYNEX	14,336
Ameritech	12,592
Bell Atlantic	11,502
GTE	11,065
USX	10,150
BellSouth	10,070
Pacific Telesis Group	9,867
Rockwell International	9,200
Exxon	8,505
Eastman Kodak	8,264
Sears, Roebuck	8,225
U S WEST	8,046
Lockheed	8,025
Southwestern Bell	7,231
United Technologies	6,946
Shell Oil	6,918
Allied-Signal	6,808
McDonnell Douglas	6,800
Boeing	6,538
TOTAL	**335,090**

Largest public funds
($ millions)

Fund	Assets
California Public Employees' Retirement System	44,036
New York State & Local Retirement Systems	38,747
New York City Retirement Systems	33,633
California State Teachers Retirement System	23,714
New York State Teachers Retirement System	23,035
New Jersey Division of Investment	19,785
Teacher Retirement System of Texas	18,930
Michigan State	16,680
Wisconsin Investment Board	15,632
Ohio Public Employees Retirement System	14,985
Ohio State Teachers Retirement System	14,821
Florida State Board of Administration	13,700
North Carolina Retirement Systems	12,446
Pennsylvania Public School Employes	12,021
Washington State Investment Board	10,600
Minnesota State Board of Investment	9,706
Oregon Public Employes	8,789
Maryland State Retirement and Pension Systems	8,274
Los Angeles County	8,262
Pennsylvania State Employes' Retirement System	7,965
Colorado Public Employees' Retirement	7,802
Virginia Supplemental Retirement System	7,610
Georgia Teachers Retirement System	7,080
Illinois Teachers' Retirement System	7,053
Alabama Retirement System	6,233
TOTAL	**391,539**

Key personnel overseeing the investment management of the fund are William F. Quinn, president-AMR Investment Services; Thomas M. Stawicki, vice president-trust investments; and Robert J. Chiore, investment analyst.

American Electric Power Co.

	($ millions)
Total assets	1,465
Defined benefit	1,107
Thrift or savings	345
PAYSOP	13
Employer contributions	na
Benefit payments	na
Passive investments:	
Indexed stocks	161
Alternative investments:	
Venture capital	26
Real estate equity	9
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	55%
Bonds	20%
Cash equivalents	22%
Real estate equity	1%
Other	2%

COLUMBUS, Ohio — American Electric Power Co. had $1.465 billion in employee benefit assets as of Sept. 30, an increase of 38.2% from $1.06 billion the previous year. The company had $1.107 billion in defined benefit assets as of Sept. 30.

Equity managers: BEA; Manning and Napier; Meeder; Metropolitan; Mount Vernon; W.H. Reaves; Fayez Sarofim; Thorndike, Doran, Paine & Lewis; and Robert Torray.

Fixed-income managers: BEA; Manning and Napier; MEG; Fayez Sarofim; and Thorndike, Doran, Paine & Lewis

Real estate managers: FS Realty and Metropolitan Life.

Venture capital manager: John Hancock.

The master trustee is Irving Trust Co.; the investment consultant is Buck.

The key person overseeing the investment management of the fund is Joseph H. Shepard Jr., manager-system corporate benefit funds.

American Information Technologies Corp.

	($ millions)
Total assets	12,592
Defined benefit	11,157
401(k)	1,435
Benefit payments	400
In-house assets:	
Equities	1,075
Short term	1,800
Passive investments:	
Indexed stocks	1,075
Indexed bonds	650
Dedicated/immunized	2,790
Alternative investments:	
International equities	750
International bonds	125
Venture capital	65
Real estate equity	330
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	50%
Bonds	41%
Cash equivalents	5%
Real estate equity	3%
Other	1%

CHICAGO — Ameritech's employee benefit assets rose 20% in the year ended Sept. 30, to $12.592 billion from $10.478 billion, according to the company. Officials would not comment on changes in the total assets or asset mix after the October market crash.

The company said it had 19 equity managers and three bond managers, none of which it would identify. The following list of managers is from the Money Market Directory.

Managers: AmeriTrust; BankOne Indianapolis; Baring International; Capital Guardian; CIGNA; Concord Capital; Delaware Investment Advisers; First Chicago Investment; First Wisconsin Trust; General American Life; David J. Greene; IDS Advisory; IDS Financial Services; IDS International; Indiana National Bank; Jennison Associates; Lincoln Capital; Loomis, Sayles; Lord, Abbett; National City Bank; National Investment Services of America; Oxford Partners; and RCM Capital Management.

The master trustee is Harris Trust; the investment consultant is Callan Associates.

The key person overseeing the investment management of the fund is Donald W. Phillips, director-investment management.

American Stores Co.

	($ millions)
Total assets	1,611
Defined benefit	96
Defined contribution	1,515
Employer contributions	65
Benefit payments	70
Portfolio insurance	225
Alternative investments:	
International equities	325
Real estate equity	64
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	57%
Bonds	30%
Cash equivalents	9%
Real estate equity	4%

SALT LAKE CITY — American Stores Co.'s total employee benefit assets grew 28.5% to $1.611 billion during the year ended Sept. 30 from $1.254 billion.

Total assets fell 11% to $1.427 billion as of Oct. 31. After the Oct. 19 stock market crash, the asset mix changed significantly. The asset mix as of Oct. 31 was 39.8% equities, down from 57%; 38% bonds, up from 30%; 16.9% cash, up from 9%; and 5.3% real estate, up from 4%.

Equity managers: Bankers Trust; Institutional Capital; J.P. Morgan; RCM; Templeton Investment Counselors; and Templeton World Fund.

Fixed-income managers: Bankers Trust; Neuberger Berman; PIMCO; and Western Asset Management.

Real estate managers: Coldwell Banker; John Hancock; La Salle; and RREEF.

Other: Equitable.

The master trustee is Bankers Trust; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are Michael T. Miller, senior vice president; Thomas M. Nielsen, vice president; and Duane D. Whitney, controller.

Master trust: Aug. 22.

American Telephone & Telegraph Co.

	($ millions)
Total assets	37,577
Defined benefit	30,838
Thrift or savings/401(k)	5,897
ESOP	842
Employer contributions	530
Benefit payments	1,100
In-house assets:	
Other	1,094
Passive investments:	
Indexed stocks	9,679
Indexed bonds	3,691
Dedicated/immunized	266
Alternative investments:	
International equities	1,771
Venture capital	383
Oil and gas	236
LBOs	206
Private placements	716

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Real estate equity	3,217
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	56%
Bonds	25%
Real estate equity	10%
International/alternative	9%

NEW YORK — AT&T Co.'s total benefit assets and pension assets climbed 23.9% to $37.577 billion from $30.34 billion for the year ended Sept. 30. Total defined benefit assets after the October market drop were $26.893 billion, a decline of 12.8%. Changes in the asset mix were market-driven. Equities slipped to 49% of assets; bonds rose to 29%, real estate became 12% and other categories accounted for the remainder of the mix.

Managers: Abbott Capital; ABD; Aldrich, Eastman; American Express; Coldwell Banker; Corporate Property Investors; J.W. O'Connor & Co.; Bankers Trust; Batterymarch; Boston Energy; Boston Co. Real Estate; Brown Brothers Harriman; Capital Guardian; Chase; Chemical; Citibank; Copley; Denver; Eastdil; Equitable; Favia, Hill; Fidelity International; First National Bank of Atlanta; First Chicago; Goldman Sachs; GT Capital; John Hancock; Heitman; First RepublicBank; INVESCO; Investment Counselors of Maryland; Ivory & Sime; Jennison; Karsten Institutional Realty; Lincoln; Loomis, Sayles; Lord, Abbett; Manufacturer's Hanover; Mellon Bank; Morgan Grenfell; J.P. Morgan; Pacific Investment; Prudential; RREEF; RCM; Standish, Ayer & Wood; State Street Bank; State Street Research; Thorndike, Doran, Paine & Lewis; United Capital; United States Trust; First Wachovia; Wells Fargo Bank; and Western Asset.

Trustees for the AT&T master pension trust are Bankers Trust, Chase Manhattan, Citibank, Mellon Bank, Northern Trust and State Street Bank.

Key personnel overseeing the investment management of the fund are David P. Feldman, corporate vice president; Robert E. Angelica, director; and Ronald R. Roessler, director.

Amoco Corp.

	($ millions)
Total assets	4,300
Defined benefit	2,515
Thrift or savings	1,567
ESOP	218
Employer contributions	48
Benefit payments	197
In-house assets:	
Equities	453
Passive investments:	
Indexed stocks	211
Alternative investments:	
International equities	262
Real estate equity	102
Hedging devices:	
Fixed-income futures	Y
Asset mix:	
Stocks	63%
Bonds	8%
Cash equivalents	11%
Real estate equity	4%
Other	14%

CHICAGO — Amoco Corp.'s employee benefit assets grew 2.9% in the 12 months ended Sept. 30, to $4.3 billion from $4.179 billion. Defined benefit plan assets alone increased 7.6%, to $2.515 billion from $2.338 billion. Amoco officials declined to state the effect of the October market drop on total assets or the asset mix.

Equity managers: CMB; Chase Manhattan; Dimensional; Fidelity Management Trust; Forstmann-Leff; Franklin Portfolio; Fayez Sarofim; and State Street Research.

Fixed-income managers: Delaware Investment and Pacific Investment.

Real estate manager: Equitable.

International managers: Fidelity International and State Street Bank.

The master trustee is Chase Manhattan.

Key personnel overseeing the investment management of the fund are Marvin L. Damsma, director-pension fund administration, and John S. Ruey, administrative manager-investments.

Arizona State Retirement System

	($ millions)
Total assets	6,182
Defined benefit	6,182
Employer contributions	142
Benefit payments	169
In-house assets:	
Cash	32
Passive investments:	
Indexed stocks	1,085
Indexed bonds	557
Alternative investments:	
International equities	503
Mortgages	229
Mortgage-backed securities	128
Asset mix:	
Stocks	48%
Bonds	39.5%
Cash equivalents	6.5%
Mortgages	4%
Mortgage-backed securities	2%

PHOENIX, Ariz. — The Arizona State Retirement System had $6.182 billion in retirement assets as of Sept. 30, a 12.3% increase from the $5.507 billion reported as of June 30, 1986. All the assets are in a defined benefit plan. Because of the market volatility in October, the fund had assets of $5.798 billion Oct. 31, a drop of 6.2%, according to C. Douglas Lemon, investment director.

Balanced managers: Boston Co.; Criterion; Fiduciary Trust; IDS Advisory; INVESCO; J.P. Morgan; Wells Fargo.

Equity manager: Bernstein-Macaulay.

Fixed-income manager: Duff & Phelps.

International/global manager: State Street; Warburg.

Mortgage manager: Valley National Bank.

The master custodian is Mellon Bank; the investment consultant is William M. Mercer-Meidinger-Hansen.

Key personnel overseeing the investment management of the fund are Edwin Gallison, director, and C. Douglas Lemon Jr., investment director.

Arkansas Teacher Retirement System

	($ millions)
Total assets	1,774
Defined benefit	1,774
Employer contributions	84
Benefit payments	68
In-house assets:	
Short term	270
Alternative investments:	
Mortgages	67
Mortgage-backed securities	12
Asset mix:	
Stocks	35.1%
Bonds	42.7%
Cash equivalents	17.3%
Mortgages	4.2%
Mortgage-backed securities	0.7%

LITTLE ROCK, Ark. — The Arkansas Teacher Retirement System's benefit assets increased 19.1% to $1.774 billion from $1.489 billion for the year ended Sept. 30.

Total assets fell 6.2% to $1.664 billion from Sept. 30 through Oct. 31, according to Mavolene C. Booth, retirement fund investment manager.

Equity managers: Oppenheimer Capital.

Fixed-income managers: First Commercial Bank.

The master custodian is First Commercial Bank. The investment consultant is E.F. Hutton.

Ms. Booth oversees the investment management of the fund.

Armco Inc.

	($ millions)
Total assets	1,999
Defined benefit	1,795
Profit-sharing	1
Thrift or savings	158
401(k)	41
ESOP	4
Employer contributions	75
Benefit payments	174
In-house assets:	
Fixed income	426
Short term	64
Passive investments:	
Indexed stocks	233
Dedicated/immunized	426
GICs	30
Alternative investments:	
International equities	51
Other international	30
Venture capital	10
Private placements	10
Real estate equity	11
Mortgage-backed securities	88
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	58.7%
Bonds	18.8%
Cash equivalents	3.7%
Real estate equity	0.6%
Mortgage-backed securities	4.9%
GICs	1.6%
Other	11.7%

PARSIPPANY, N.J. — Armco Inc. had total employee benefit assets of $1.999 billion as of Sept. 30, an increase of 16.8% from $1.712 billion the previous year. Defined benefit assets totaled $1.795 billion as of Sept. 30, an increase of 16.2% from $1.545 billion a year earlier.

As of Nov. 1, defined benefit assets had declined 11.6% to $1.586 billion because of the market's activity during October. A company executive said no changes in the asset mix are anticipated.

Equity managers: Alliance; Capital Guardian; Columbus Circle; Lincoln; Mellon Capital; Miller, Anderson & Sherrerd; and Oechsle.

Fixed-income manager: Armco Investment.

Real estate manager: RREEF.

GIC manager: John Hancock.

Private placements manager: Equitable.

The master trustee is Chase Manhattan Bank; the investment consultant is SEI.

The key person overseeing the investment management of the fund is Dennis F. Furey, general manager-pension investments.

Army and Air Force Exchange Service

	($ millions)
Total assets	1,305
Defined benefit	1,277
Thrift or savings	28
Employer contributions	65
Benefit payments	52
Portfolio insurance	48
Passive investments:	
Indexed stocks	200
Alternative investments:	
International equities	114
International bonds	28
Venture capital	11
Private placements	123
Real estate equity	97
Mortgage-backed securities	22
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	65%
Bonds	8%
Cash equivalents	3%
Real estate equity	8%
Mortgage-backed securities	2%
Annuities	10%
Other	4%

DALLAS — Total employee benefit assets at the Army and Air Force Exchange Service increased 19.5% in the year ended Sept. 30, to $1.305 billion from $1.092 billion.

Equity managers: Independence; Citicorp; Dimensional Fund Advisors; Trinity; Wells Fargo; Nicholas-Applegate; Citibank-London; Morgan Grenfell; State Street Bank; and Westport.

Fixed-income managers: Robert C. Brown; Citicorp; Hibernia; Dimensional Fund Advisors; and PCM International.

Real estate managers: Aetna; John Hancock; J.P. Morgan; Goldman Sachs; JMB; LaSalle; and RREEF.

Insurance contract managers: Aetna and John Hancock.

Participating mortgage manager: Aetna.

Venture capital manager: Abbott Capital and John Hancock.

Options manager: Balch, Hardy & Scheinman.

The investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Kenneth C. Weaver, assistant comptroller-insurance division; Louis H. Bornmann II, assistant chief-insurance division; and Patricia M. Hogan, chief, accounting branch-insurance division.

Atlantic Richfield Co.

	($ millions)
Total assets	3,236
Defined benefit	2,357
Thrift or savings	411
401(k)	251
PAYSOP	217
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	1,182
Fixed income	209
Short term	75
Real estate	23
Passive investments:	
GICs	38
Alternative investments:	
International equities	573
International bonds	71
Venture capital	42
Oil and gas	5
Private placements	49
Real estate equity	190
Mortgages	23
Mortgage-backed securities	34
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	68%
Bonds	16%
Cash equivalents	4%
Real estate equity	8%
Mortgages	1%
Mortgage-backed securities	1%
GICs	1%
Venture capital/private placements	1%

LOS ANGELES — Atlantic Richfield Co.'s total assets grew 19.9% to $3.236 billion from $2.7 billion for the year ended Sept. 30, mainly because of a 32% increase in defined contribution plan assets. The defined benefit plan grew almost 16%, but the stock market crash wiped out almost all gains as the the plan lost 15% of assets during October. The affect of the market crash on the total portfolio mix reduced stocks by a few percentage points while bonds and cash portions made up the difference.

Equity managers: Capital Guardian; Emerging Markets; G.T. Capital; Rowe-Price, Fleming; Warburg.

Fixed-income managers: Baring; Fiduciary Trust; MacKay-Shields; J.P. Morgan, Solomon Asset Management.

Real estate managers: Aldrich, Eastman & Waltch; Fox Group; Lehndoff & Babson.

The master trustee is State Street.

The key person overseeing the investment management of the fund is E. Kent Damon Jr., vice president and investment officer.

B

Bakery & Confectionery Union & Industry International Pension Fund

	($ millions)
Total assets	2,000
Defined benefit	2,000
Employer contributions	160
Benefit payments	140
Passive investments:	
Indexed stocks	60
Indexed bonds	40
Dedicated/immunized	80
GICs	132
Alternative investments:	
Mortgages	80
Asset mix:	
Stocks	38.9%
Bonds	38.2%
Cash equivalents	8.9%
Mortgages	4.4%
GICs	7%
Other	2.6%

KENSINGTON, Md. — The Bakery & Confectionery Union & Industry International Pension Fund's total assets increased 25% to $2 billion as of Sept. 30, from $1.6 billion a year earlier. As a result of the October market drop, assets totaled $1.7 billion as of Oct. 31, a drop of 15%.

Balanced managers: Lazard Freres; Loomis, Sayles; M.D. Sass, Stein, Roe & Farnham; Trust Co. of the West; and Wertheim.

The master custodian is National Bank of Washington.

John Fleming is administrative director of the fund.

Baltimore City Retirement Systems

	($ millions)
Total assets	1,400
Defined benefit	1,400
Employer contributions	42
Benefit payments	57
Passive investments:	
GICs	74
Alternative investments:	
Real estate equity	3
Mortgages	23
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	29%
Bonds	47%
Cash equivalents	16%
Real estate equity	1%
Mortgages	2%
GICs	5%

BALTIMORE — Total assets of the the Baltimore City Retirement Systems increased 22% in the year ended Sept. 30, to $1.4 billion from $1.146 billion. Because of the market volatility, assets declined 14.3% to $1.2 billion as of Oct. 31.

Equity managers: Addison; Ariel; Alex. Brown; Crawford; Delaware Investment; Dietche & Field; Dreman; Eagle; Investment Counselors of Maryland; Oppenheimer Capital; Putnam Advisory; Fayez Sarofim; and Edward A. Viner.

Fixed-income managers: Mercantile Safe Deposit; Oppenheimer; and Sarofim.

Real estate managers: Heitman and JMB.

GIC managers: Lincoln National; State Mutual Life; State Street Research; and Transamerica Occidental.

Other managers: Balch Hardy & Scheinman and Bank of Baltimore.

The master custodian is Mercantile Safe; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are Ernest J. Glinka, administrator; Thomas P. Taneyhill, deputy administrator; and Charles W. Parker, accounting manager.

Bechtel Power Corp.

	($ millions)
Total assets	1,478
Defined contribution	1,478
Employer contributions	na
Benefit payments	na
Portfolio insurance	877
Passive investments:	
Indexed stocks	91
GICs	32
Alternative investments:	
International equities	187
International bonds	26
Real estate equity	58
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	59%
Bonds	21%
Cash equivalents	14%
Real estate equity	4%
GICs	2%

SAN FRANCISCO — Bechtel Power Corp. had $1.478 billion in total employee benefit assets as of Sept. 30, an increase of 5.6% from $1.4 billion the previous year. All of the money is in defined contribution assets.

Between Sept. 30 and Nov. 1, assets declined 10.8% to $1.318 billion. The asset mix as of Nov. 1 was not available.

—**Equity managers:** Batterymarch; Columbia; Dodge & Cox; Dreman Value; G.T. Capital; J.P. Morgan; Morgan Grenfell; Sit Investment; Wellington Trust; Wells Fargo.

Fixed-income managers: Columbia Trust; J.P. Morgan; Pacific Investment; Sierra Asset Management.

Real estate managers: Aetna; Corporate Property Investors; Prudential; RREEF.

GIC manager: Sierra Asset.

The master trustee is Bankers Trust Co.

Key personnel overseeing the investment management of the fund are D. L. Redo and V.P. Kuhn Jr., investment managers.

Bell Atlantic Corp.

	($ millions)
Total assets	11,502
Defined benefit	9,974
Thrift or savings	430
401(k)	824
ESOP	274

PHILADELPHIA — Bell Atlantic Corp.'s employee benefit assets rose 21% in the year ended Sept. 30, to $11.502 billion from $9.5 billion. Bell Atlantic executives would not release asset figures as of Oct. 31, nor would they identify the fund's managers.

The following listing of investment managers is from the Money Market Directory.

Managers: Abbott Capital; Aldrich Eastman & Waltch; AmeriTrust; Aronson & Fogler; Bankers Trust/Des Moines; Bankers Trust — Investment Management Group; Brown Brothers Harriman; Capital Guardian; Citicorp Investment; Copley; Corporate Property Investors; Richard Ellis; First Manhattan; Fischer Francis Trees & Watts; Franklin Portfolio; Geewax Terker; Grantham Mayo Van Otterloo; Jennison Associates; La Salle; Lord, Abbett; Matrix; Mellon Capital; Mellon Real Estate; Mercantile Bank; Metropolitan Life; Miller Anderson & Sherrerd; The New England; J.W. O'Connor; Pacific Investment Management; PRIMECAP; Rosenberg Institutional Equity; Walter Scott & Partners; Walter Scott International; Sovran Bank; Sovran Capital; Standish Ayer & Wood; State Street Bank; Thorndike Doran Paine & Lewis; Travelers Insurance; Wellington Investment Advisors; and Wellington Management.

According to the company, the master trustee is Mellon Bank and the investment consultant, Frank Russell.

Key personnel overseeing the investment management of the fund are William O. Albertini, vice president-secretary and treasurer; Joseph A. Bobrowski, director-trust administration; and Edward P. Rennie, director-trust investment management.

BellSouth Corp.

	($ millions)
Total assets	10,070
Defined benefit	8,384
Thrift/savings/401(k)/ESOP	1,686

ATLANTA — BellSouth Corp.'s employee benefit assets rose 15% in the year ended Sept. 30, to $10.07 billion from $8.75 billion.

BellSouth executives would not release further data. The following list of managers is from the Money Market Directory.

Managers: Aetna; AmSouth; Bankers Trust; Barnett Banks; Brown Brothers Harriman; C&S Investment; Connecticut General; Dimensional Fund Advisors; First Kentucky; First Tennessee Investment; First Union National Bank Capital Management; First Wachovia; INVESCO; Jennison Associates; Loomis, Sayles; Massachusetts Mutual; Metropolitan Life; Mutual Benefit; NCNB; PIMCO; Provident National Assurance; Prudential Asset Management; State Street Bank; TREET; Third National Bank; Vanguard Group; and Wells Fargo Investment.

The master trustee is First Wachovia.

The key person overseeing the investment management of the fund is Kincaid Patterson, director-trust assets.

Bethlehem Steel Corp.

	($ millions)
Total assets	2,699
Defined benefit	2,699
Employer contributions	150
Benefit payments	480
In-house assets:	
Equities	975
Fixed income	1,367
Short term	187
Other	170
Asset mix:	
Stocks	36%
Bonds	51%
Cash equivalents	7%
Other	6%

BETHLEHEM, Pa. — Total assets slid 7.3% to $2.699 billion from $2.913 billion for the year ended Sept. 30. An additional 7.4% — or $200 million — was lost during the stock market crash. The fund's portfolio shifted 5% out of stocks and into bonds as a result of the crash.

The fund is managed internally except for a very small GIC account with Prudential. The master custodian is Bankers Trust.

Gerard Mead, pension fund manager, oversees investments.

Boeing Co.

	($ millions)
Total assets*	6,538
Defined benefit	3,940
Thrift or savings	2,598
Employer contributions	na
Benefit payments	na

*From Money Market Directory

SEATTLE — Boeing Co. had $6.538 billion in total assets as of June 30, according to the Money Market Directory, an apparent decrease of 9.2% from the $7.2 billion the company reported as of Sept. 30, 1986.

According to the Money Market Directory, the managers are as follows.

Managers: Aetna; Alliance; Beekman; Robert C. Brown; Cambiar; Capital Guardian; Cashman, Farrell; Chase Investors; Chase Manhattan Bank; First Chicago Investment; First Interstate/Washington; Geewax, Terker; IDS Advisory; IDS Financial; INVESCO; J.P. Morgan; Massachusetts Financial Services; McKee Investment; Olympic Capital; PIMCO; PRIMECAP; Provident Capital; RCM; Roanoke Asset; Frank Russell Trust; Seattle-First National Bank; Security Pacific Investment; Sirach/Flinn, Elvins; Sit Investment; Cabanne Smith; TCW Asset; ValueQuest; Waite & Correnti;

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The master trustee is Chase Manhattan; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Gary B. Bland, vice president-trust investments, and Elizabeth Marcoux, manager-trust investments.

Boilermaker Blacksmith National Pension Trust

	($ millions)
Total assets	2,230
Defined benefit	2,230
Employer contributions	52
Benefit payments	89
In-house assets:	
Short term	25
Passive investments:	
Dedicated/immunized	110
GICs	74
Alternative investments:	
Real estate equity	200
Asset mix:	
Stocks	44%
Bonds	29%
Cash equivalents	14%
Real estate equity	10%
GICs	3%

KANSAS CITY, Kan. — Total benefit assets and pension assets for the Boilermakers-Blacksmiths National Pension Trust increased 12.4% to $2.23 billion on Sept. 30 from $1.984 billion June 30, 1986.

Total assets as of Oct. 31 dropped to $1.984 billion, a decline of 11%, as a result of the market drop and other factors. Also, the asset mix changed to 38% stocks, while bonds moved to 32%, cash equivalents to 16%, real estate to 11% and GICs to 3%.

Equity managers: Atalanta-Sosnoff; Independence; Lazard Freres; Neuberger & Berman; Provident.

Fixed-income managers: Financial Counselors; Lehman; Loomis Sayles; Scudder.

Balanced managers: Fred Alger; McMorgan; TCW.

Real estate managers: Equitable; Karsten; J.P. Morgan; New England; Prudential.

The master custodian is Brotherhood Bank & Trust; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Charles E. Woelfer, chairman-board of trustees; Arthur E. Farr, chairman-investment committee; and David E. Hanson, financial director.

C

California Public Employees' Retirement System

	($ millions)
Total assets	44,036
Defined benefit	44,036
Employer contributions	2,700
Benefit payments	1,700
In-house assets:	
Equities	15,748
Fixed income	16,024
Short term	2,859
Other	4,687
Alternative investments:	
Private placements	1,000
Real estate equity	2,241
Mortgages	2,447
Mortgage-backed securities	8,181
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	43.2%
Bonds	20.4%
Cash equivalents	6.5%
Real estate equity	5.1%
Mortgages	5.6%
Mortgage-backed securities	18.6%
Other	0.6%

SACRAMENTO, Calif. — The California Public Employees' Retirement System had $44.036 billion in total employee benefit assets as of Sept. 30, an increase of 14.4% from the $37.7 billion the previous year.

However, between Sept. 30 and Nov. 1, those assets declined 9.4% to $39.9 billion as a result of the market turmoil during October. The asset mix as of Nov. 1 was 38.2% equities, 42.4% bonds, 0.3% convertibles, 6.1% mortgages, 5.6% real estate equity, 6.8% cash and cash equivalents, and 0.6% in pooled assets in the state treasury commingled fund.

Equity managers: Atalanta/Sosnoff; Batterymarch; Citicorp; Dimensional Fund Advisors; Fidelity Bank; First Chicago; Lazard Freres; TSA; and RCM.

Real estate managers: Richard Ellis; Equitable; FIA; Heitman; LaSalle; and TCW Realty.

The master custodian is Boston Safe Deposit & Trust; the investment consultant is Wilshire Associates.

Key personnel overseeing the investment management of the fund are Basil J. Schwan, assistant executive officer; Greta E. Marshall, investment manager; and Walton R. Williams, principal investment officer.

California State Teachers' Retirement System

	($ millions)
Total assets	23,714
Defined benefit	23,714
Employer contributions	719
Benefit payments	1,176
Passive investments:	
Indexed stocks	10,700
Indexed bonds	5,800
Alternative investments:	
Private placements	553
Real estate equity	633
Mortgages	1,115
Mortgage-backed securities	1,646
Asset mix:	
Stocks	56.4%
Bonds	19.8%
Cash equivalents	9.5%
Real estate equity	2.7%
Mortgages	4.7%
Mortgage-backed securities	6.9%

SACRAMENTO, Calif. — The California State Teachers' Retirement System had $23.714 billion in assets as of Sept. 30, a 22.9% increase from the $19.3 billion the previous year.

Between Sept. 30 and Nov. 1, the system's assets dropped 9.8% to $21.4 billion, a result of the stock market fall.

Equity managers: Barrow, Hanley, Mewhinney & Strauss; Denver Investment; Equitable Investment; Pilgrim, Baxter, & Greig; Provident Investment; TCW; Trinity; Wells Fargo; Wilmington Capital; and Wright Investors Services.

Fixed-income managers: Manufacturers Hanover.

Real estate managers: Equitable Real Estate; Lendorff & Babson; and TCW Realty.

The master custodian is State Street Bank; the investment consultants are Wilshire Associates and Institutional Property Consultants.

The key person overseeing the investment management of the fund is Thomas E. Flanigan, chief investment officer.

University of California

	($ millions)
Total assets	11,228
Defined benefit	10,329
403(b)	899
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	8,564
Fixed income	1,765
Alternative investments:	
International equities	39
Venture capital	111
Asset mix:	
Stocks	83%
Bonds	17%

BERKELEY, Calif. — As of Sept. 30, the retirement assets of the University of California totaled $11.228 billion, an increase of 34% from $8.378 billion the previous year. Defined benefit plan assets also grew 34%, to $10.329 billion from $7.687 billion. All assets are managed in-house.

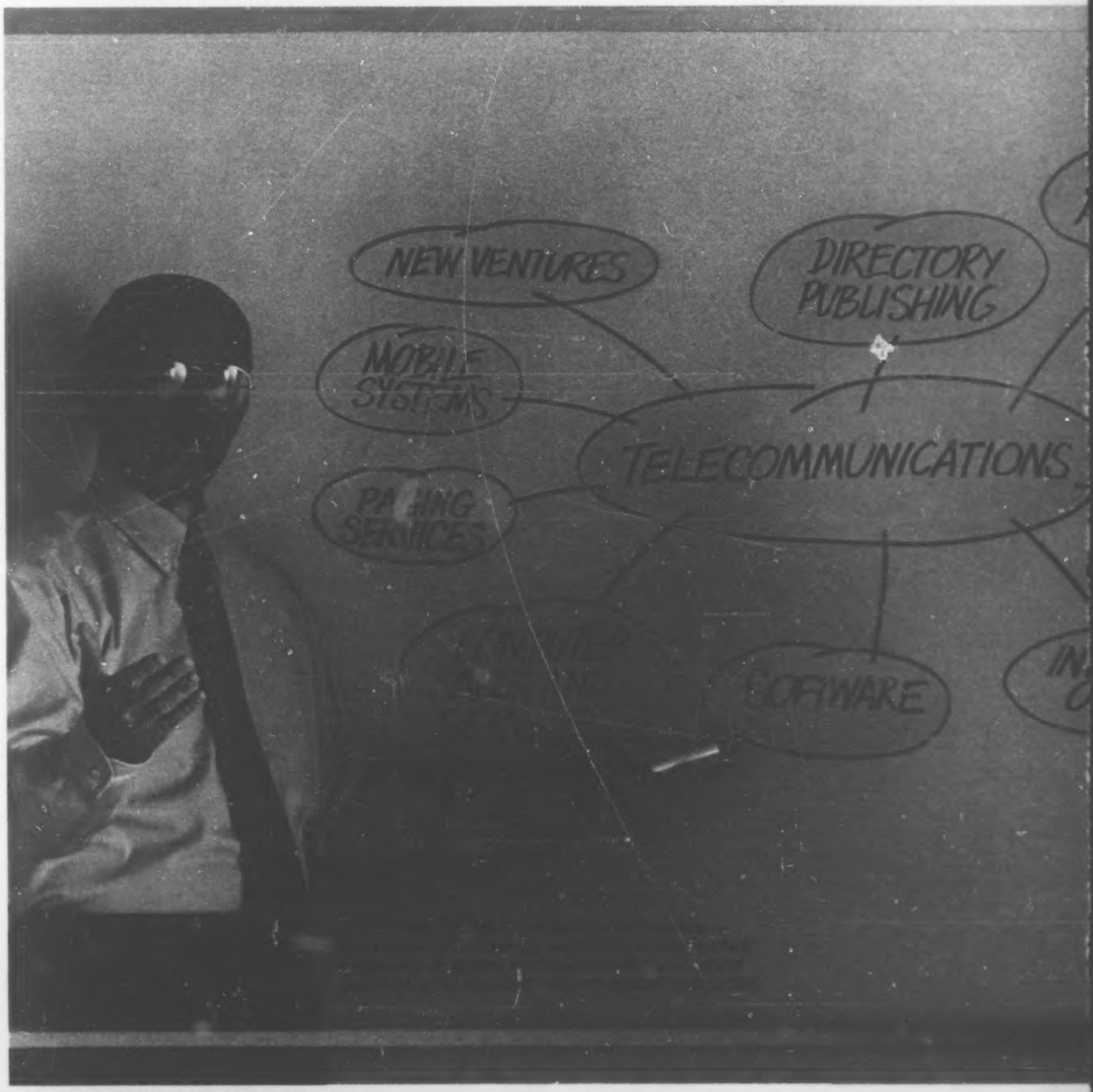
The master custodian is Bankers Trust.

Key personnel overseeing the investment management of the fund are Herbert Gordon, treasurer, and Patricia Small, associated treasurer.

Caterpillar Inc.

	($ millions)
Total assets	4,423
Defined benefit	3,800
Defined contribution	487
Profit-sharing	4
401(k)	76
ESOP	56
Employer contributions	na

BellSouth



Benefit payments	na
Passive investments:	
Indexed stocks	196
Dedicated/immunized	1,004
Alternative investments:	
International equities	430
Oil and gas	18
Real estate equity	194
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	41%
Bonds	38%
Cash equivalents	5%
Real estate equity	5%
International	11%

PEORIA, Ill. — Caterpillar Inc.'s employee benefit assets increased 22.3% to $4.423 billion from $3.617 billion in the 12 months ended Sept. 30. Pension assets alone increased 16.4%. Caterpillar officials declined to say how much the October market decline affected assets.

Equity managers: Citicorp, Delaware, Jennison, Mellon Capital, Oppenheimer, PRIMECAP, Trinity.

Fixed-income managers: Chase Investors, J.P. Morgan.

Real estate managers: Aetna, Equitable, First Chicago, LaSalle Street Fund.

International managers: Baring International, Fidelity International.

The master trustee is Northern Trust Co.; the investment consultant is Frank Russell Co.

Key personnel overseeing the investment management of the fund are F.V. Dickinson, manager-risk management and employee benefit funds, and V.A. Kane, benefit funds coordinator.

Chevron Corp.

	($ millions)
Total assets*	6,912
Defined benefit	4,064
Defined contribution	2,848
Employer contributions	20
Benefit payments	na

P&I Age estimate

SAN FRANCISCO — *Pensions & Investment Age* estimates Chevron Corp.'s total benefit assets grew 17% in the 12 months ended Sept. 30, to $6.912 billion from the $5.898 billion the company the previous year.

The company would not identify its money managers. The list below is provided by Money Market Directory.

Retirement plan managers: Sanford Benstein; Jennison; Mellon Capital; PIMCO; Prudential; RCM; RREEF; State Street Research; STW; Travelers; and Wells Fargo.

Profit-sharing/savings plan managers: American Mutual; Sanford Bernstein; and Jennison.

The master trustee is Bankers Trust, New York; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Sellers Stough, vice president-finance; D.G. Henderson, controller; Neil G. Darling, manager-investment analysis; and Robert G. Williamson, assistant comptroller.

Investment advisers: May 23.

Municipal Employees' Annuity and Benefit Fund of Chicago

	($ millions)
Total assets	1,545
Defined benefit	1,545
Employer contributions	na
Benefit payments	na
In-house assets:	
Short term	43
Alternative investments:	
International equities	51
Venture capital	24
Real estate equity	86
Mortgages	50
Mortgage-backed securities	105
Hedging devices:	
Stock options	Y
Bond options	Y
Asset mix:	
Stocks	38%
Bonds	32%
Cash equivalents	7%
Real estate equity	6%
Mortgages	3%
Mortgage-backed securities	7%
International equity	4
Venture capital	2%
Limited partnerships	1%

CHICAGO — The Municipal Employees' Annuity and Benefit Fund of Chicago had defined benefit assets of $1.545 billion as of Sept. 30, an increase of 32.1% from $1.17 billion the previous year.

Equity managers (domestic): Ariel; Chicago Asset; Oppenheimer Capital; and Ruggles & O'Neill.

(International): Frank Russell Trust.

Balanced managers: Alliance; Bankers Trust; First Chicago Investment; and Trident.

Real estate managers: Aetna; Equitable; Prudential Asset; and Trident/Meyer.

Venture capital managers: Citicorp Investment; First Analysis; Mesirow Financial; and Pacific Inland.

The master custodian is Continental Illinois National Bank & Trust Co. of Chicago; the investment consultant is Becker, Burke Associates.

Key personnel overseeing the investment management of the fund are Thomas J. Stack, executive director, and Michael J. Nehf, comptroller.

Public School Teachers' Pension and Retirement Fund of Chicago

	($ millions)
Total assets*	3,280
Defined benefit	3,280

*estimate as of Aug. 31, 1987

In-house assets:	
Equities	1,604
Fixed income	1,466
Short term	210
Asset mix:	
Stocks	48.9%
Bonds	44.7%
Cash equivalents	6.4%

CHICAGO — The Public School Teachers' Pension and Retirement Fund of Chicago's total employee benefit assets increased approximately 32.7% to an estimated $3.28 billion from $2.471 billion for the 12 months ended Aug. 31.

Equity adviser: Capital Supervisors.

Fixed-income adviser: Capital Supervisors.

James Ward, executive director, oversees the investment management of the fund.

Chrysler Corp.

	($ millions)
Total assets	4,225
Defined benefit	3,535
401(k)	690
Employer contributions	70
Benefit payments	425
Portfolio insurance	1,073
In-house assets:	
Equities	860
Passive investments:	
GICs	13
Alternative investments:	
International equities	27
Venture capital	33
Private placements	2
Real estate equity	77
Mortgages	2
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	52%
Bonds	35%
Cash equivalents	8%
Real estate equity	2%
Other	3%

HIGHLAND PARK, Mich.— Chrysler Corp.'s total benefit assets increased 30% in the year ended Sept. 30, to $4.225 billion from $3.26 billion. Defined benefit assets alone increased 25% during the same period, to $3.535 billion from $2.824 billion.

Because of the market volatility during October, the total assets dropped 10% to $3.792 billion and defined benefit assets dropped 9.7% to $3.191 billion. The company has reduced its concentration in stocks and bonds as a result of market conditions, but did not give new figures.

Equity managers: Associated Capital; Atalanta/Sosnoff; Avatar; Bear Stearns; Bernstein; Chase; Columbus Circle; Glickenhaus; Harris Associates; Hutton Capital; Leavy; McKenzie Walker; Merrill Lynch; Manufacturers National Bank of Detroit; Palley-Needelman; Ruggles & O'Neill; Fayez Sarofim; and Trust Company of the West.

Fixed-income managers: Bankers Trust; Irving Trust; Morgan Stanley; J.P. Morgan; National Bank of Detroit;

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and Trust Company of the West.

Real estate managers: Eastdil; JMB; Prudential; and Rosenberg.

GIC managers: Aetna; John Hancock; Massachusetts Mutual; and Travelers.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are Frederick W. Zuckerman, vice president and treasurer; Russell P. Flynn, manager of pension fund investments; and Joseph L. Arpin, assistant treasurer.

CIGNA Corp.

	($ millions)
Total assets	1,351*
Defined benefit	1,025
Defined contribution	5
Profit-sharing	93
Thrift or savings	228
Employer contributions	50
Benefit payments	60

*defined benefit assets as of June 1987, all others as of December 1986

Passive investments:	
Indexed stocks	25
Alternative investments:	
International equities	45
Private placements	9
Real estate equity	83
Asset mix:	
Stocks	59%
Bonds	18%
Real estate equity	8%
Other	15%

PHILADELPHIA — CIGNA Corp.'s total employee benefit assets grew about 10.6%, to $1.351 billion as of June 30, 1987, from the $1.221 billion reported Sept. 30, 1986.

The total reported is composed of defined benefit assets of $1.025 billion as of June 30, and defined contribution assets totaling $326 million at the end of 1986. Defined benefit assets increased 7.4% in the nine-month period.

All plan assets are managed by CIGNA affiliates.

Key personnel overseeing the investment management of the fund are James G. Stewart, executive vice president and chief financial officer, and Richard Maine, chief investment officer.

Citicorp

	($ millions)
Total assets*	2,035
Defined benefit	1,563
Defined contribution	472

**P&I Age* estimate

NEW YORK — Citicorp's total benefit assets climbed 19.6% to $2.035 billion as of Sept. 30 from $1.7 billion the previous year, *Pensions & Investment Age* estimates. Defined benefit plan assets increased 21% to an estimated $1.563 billion from $1.292 billion.

Public Employees Retirement Association of Colorado

	($ millions)
Total assets	7,802
Defined benefit	4,800
Defined contribution	3,000
401(k)	2
Employer contributions	4
Benefit payments	250
In-house assets:	
Equities	2,800
Fixed income	1,000
Short term	500
Other	500
Passive investments:	
Indexed stocks	700
GICs	134
Alternative investments:	
Private placements	150
Real estate equity	336
Mortgages	640
Mortgage-backed securities	1,000
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	43%
Bonds	20%
Cash equivalents	4%
Real estate equity	5%
Mortgages	9%
Mortgage-backed securities	17%
GICs	2%

DENVER — The Public Employees Retirement Association of Colorado's total benefit assets and pension assets rose 23% to $7.8 billion as of Sept. 30. Total assets after the market drop of October fell to $6.9 billion as of Oct. 31.

The custodian is Manufacturers Hanover. The investment consultants are Bankers Trust, Provident National Bank and Capital Trust.

Key personnel overseeing the investment management of the fund are Norman Benedict, deputy executive director; Bud Cosby, director of equity; and Keith Geddis, director of real estate.

Commonwealth Edison Co.

	($ millions)
Total assets	1,951
Defined benefit	1,951
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	685
Fixed income	69?
Short term	248
Passive investments:	
Indexed stocks	208
Alternative investments:	
International equities	34
International bonds	13
Private placements	7
Mortgage-backed securities	160
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	51%
Bonds	28%
Cash equivalents	13%
Mortgage-backed securities	8%

CHICAGO — Commonwealth Edison Co. had $1.951 billion in defined benefit assets as of Sept. 30, an increase of 15.6% from $1.687 billion the previous year. As of Nov. 1, the company's assets had fallen 9.3% to $1.77 billion as a result of the market turmoil during October. Fund officials declined comment on changes in the asset mix.

The bulk of the assets, $1.629 billion, is managed internally. The balance of the money is run by various commingled fund and mutual fund managers, which Commonwealth Edison officials declined to identify.

The master custodian is The Northern Trust Co.

Key personnel overseeing the investment management of the fund are Howard R. Carlson, manager of investments; Jack A. Cerney, equity portfolio manager; and Rickard P. Schwartz, fixed-income manager.

The State of Connecticut Trust Funds

	($ millions)
Total assets	5,736
Defined benefit	5,736
Employer contributions	600
Benefit payments	280
In-house assets:	
Fixed income	812
Short term	380
Other	104
Passive investments:	
Indexed stocks	557
GICs	77
Alternative investments:	
Real estate equity	709
Mortgage-backed securities	32
Asset mix:	
Stocks	46.6%
Bonds	32.4%
Cash equivalents	6.6%
Real estate equity	12.4%
Mortgage-backed securities	0.6%
GICs	1.4%

HARTFORD, Conn. — Total assets of the State of Connecticut Trust Funds grew 19% to $5.736 billion in the year ended Sept. 30, from $4.819 billion the previous year.

After the Oct. 19 stock market crash, total assets slipped 7% to $5.341 billion. The asset mix shifted to 40% stocks, 39% fixed income, 14% real estate and 7% cash.

Equity managers: Aetna; Bankers Trust; Bigler Investment Management; Capital Guardian; Concord Capital; Connecticut National; Franklin; New England Asset Management; One Lewis Street; Oppenheimer; Phoenix Mutual; Provident Capital; Roanoke; WMG; and Wright Investors.

Fixed-income managers: Bear Stearns; Loomis, Sayles; PIMCO; Standish, Ayer; State Street Research; and STW.

Real estate managers: Aetna; Aldrich, Eastman & Waltch; CIGNA; Copley; Hancock; Heitman; JMB; Morgan Bank; Phoenix Mutual; Public Storage; State Street; RREEF; and TCW.

The master custodian is Boston Safe Deposit; the investment consultant is Buck Pension Fund Services for domestic activities and Wilshire Associates for international.

Key personnel overseeing the investment management of the fund are Frank McDermott, assistant treasurer-investments; Terry A. Helming, investment officer-fixed income; and Robert Staley, investment officer-real estate.

Consolidated Edison Co. of New York

	($ millions)
Total assets	2,853
Defined benefit	2,645
Thrift or savings	75
401(k)	133

NEW YORK — Consolidated Edison Co.'s total benefit assets rose 24% to $2.853 billion as of Sept. 30, compared to $2.297 billion the previous year. Defined benefit assets rose [illegible] during the 12 months, to $2.645 billion from $2.143 billion. Fund officials would not release figures as of Oct. 31.

The key person overseeing the investment management of the fund is John N. Bell, assistant treasurer.

D

Deere & Co.

	($ millions)
Total assets*	2,346
Defined benefit	2,260
Profit-sharing	1
401(k)	72
PAYSOP	13
Employer contributions	na
Benefit payments	na

*From Money Market Directory

MOLINE, Ill. — Deere & Co. officials declined to participate in *Pensions & Investment Age's* 1987 survey of the top 200 pension funds. Because of the varying dates of information available from the 1988 Money Market Directory, a meaningful comparison of 1987 and 1986 assets was not possible.

Equity managers: Batterymarch; J.P. Morgan; Wright.

Fixed-income managers: Brown Brothers Harriman; J.P. Morgan.

Real estate managers: J.P. Morgan.

The master trustee of the defined benefit plans is Boston Safe Deposit; custodian and investment manager of the defined contribution plans is State Street Bank. No investment consultant is used.

Key personnel overseeing the investment management of the fund are Carl Liebscher, director-investments, and S.M. Syverud, manager-investment analysis.

Delta Air Lines Inc.

	($ millions)
Total assets	3,150
Defined benefit	2,750
Thrift or savings	400
In-house assets:	
Equities	110
Fixed income	190
Passive investments:	
Indexed stocks	70
GICs	30
Alternative investments:	
International equities	220
Venture capital	20
LBOs	50
Mortgage-backed securities	50
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	57.2%
Bonds	25%
Cash equivalents	15%
Mortgage-backed securities	1.8%
GICs	1%

ATLANTA — Total employee benefit assets at Delta Air Lines Inc. increased 23.5% to $3.15 billion from $2.55 billion in the year ended Sept. 30. Pension fund assets increased 25% to $2.75 billion from $2.2 billion for the same period.

James B. Taylor, assistant vice president-investment management, did not have asset figures as of Oct. 30.

Although he would not identify the fund's managers, *Pensions & Investment Age* reported Nov. 2 the fund invested $50 million in Forstmann Little & Co.'s Buyout Partnership-IV. According to the 1986 Money Market Directory, the fund managers also include Harris Bank, Travelers and Vanguard.

The master trustee is Harris Trust.

Key personnel overseeing the investment management of the fund are Mr. Taylor and James G. Mathews, manager-investment management.

Detroit Retirement Systems

	($ millions)
Total assets*	2,948
Defined benefit assets	2,520
Defined contribution	428
Employer contributions	165
Benefit payments	180

*Book value as of June 30, 1987

In-house assets:	
Short term	50
Passive investments:	
Indexed stocks	45
Indexed bonds	10
GICs	410
Alternative investments:	
International equities	15
International bonds	7
Venture capital	52
Private placements	343
Real estate equity	53
Mortgages	375
Mortgage-backed securities	133
Asset mix:	
Stocks	26%
Bonds	22%
Cash equivalents	9%
Real estate equity	3%
Mortgages	11%
Mortgage-backed securities	5%
GICs	13%
Other	11%

DETROIT — The book value of the total employee benefit assets of the Detroit Retirement Systems, composed of the General Retirement System and the Police & Fire Retirement System, was $2.948 billion as of June 30, an increase of 7.5% from $2.742 billion a year earlier.

Equity managers: Ariel; Bankers Trust (index fund); Citicorp (foreign equities); Comerica; Feldsman; Manufacturers National (index fund); and Marquette.

Fixed-income managers: First Federal Savings (short term) and Manufacturers National (index fund).

Balanced managers: Boston Co.; Harbor; Loomis, Sayles; Munder; Oppenheimer; Putnam; and Scudder, Stevens & Clark.

Real estate managers: Mellon Real Estate and Mortgage Investors.

The master custodian for the general system is Comerica; the police and fire system uses Manufacturers National. The investment consultant for the general system is Prudential-Bache; the police and fire system uses SEI.

Key personnel overseeing the investment management of the funds are Fred Murphy, executive secretary, and Nicholas Degel, administrative assistant.

Digital Equipment Corp.

	($ millions)
Total assets	1,322
Defined benefit assets	1,201
Thrift or savings/401(k)	121
Employer contributions	na
Benefit payments	6
In-house assets:	
Equities	435
Passive investments:	
Indexed stocks	257
Indexed bonds	90
Alternative investments:	
Venture capital	7
Real estate equity	157
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67.5%
Bonds	16%
Cash equivalents	2%
Real estate equity	14%
Venture capital	0.5%

ACTON, Mass. — Digital Equipment Corp.'s employee benefit assets rose 42% in the year ended Sept. 30 to $1.32 billion from $928 million.

Equity managers: Alliance Capital; Bankers Trust; and Capital Guardian.

Fixed-income managers: Bankers Trust and Jennison.

Real estate manager: Aldrich, Eastman & Waltch.

The master trustee is Boston Safe Deposit.

The key person overseeing the investment management of the fund is A. Raymond Schmalz, manager-U.S. pension fund.

Dow Chemical Co.

	($ millions)
Total assets	2,890
Defined benefit	2,340
401(k)	550
Employer contributions	165
Benefit payments	160
In-house assets:	
Equities	465
Fixed income	150
Passive investments:	
Indexed stocks	350
GICs	50
Alternative investments:	
International equities	175
Venture capital	30
Real estate equity	70
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	63%
Bonds	19%
Cash equivalents	14%
Real estate equity	2%
GICs	2%

MIDLAND, Mich. — Dow Chemical Co.'s total employee benefit assets grew 39% to $2.89 billion as of Sept. 30 from $2.08 billion the previous year; defined benefit assets grew 32% to $2.34 billion from $1.77 billion. Fund officials would not release Oct. 31 figures.

Equity managers: Alliance; Bankers Trust; Capital Guardian; J.P. Morgan; Provident Capital; Schroder Capital Management; State Street Research; and Wellington Trust.

Fixed-income manager: J.P. Morgan.

Real estate managers: Acquest; Aldrich, Eastman & Waltch; Coldwell Banker; Lehndorff & Babson; and TCW Realty.

The master trustee is National Bank of Detroit.

Key personnel overseeing the investment management of the fund are Robert McFedries, director-portfolio investment; W. Jerry Burroughs, senior portfolio manager; and Richard Cross, portfolio manager.

E.I. du Pont de Nemours & Co. Inc.

	($ millions)
Total assets	16,868
Defined benefit	12,300
Thrift or savings	3,728
401(k)	431
TRASOP/ESOP	409
Employer contributions	99
Benefit payments	679
Portfolio insurance	138
In-house assets:	
Equities	6,561
Fixed income	3,838
Short term	1,220
Other	27
Passive investments:	
Indexed stocks	2,057
GICs	13
Alternative investments:	
International equities	429
International bonds	738
Venture capital	45
Private placements	13
Real estate equity	55
Mortgage-backed securities	884
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	57%
Bonds	25%
Cash equivalents	10%
Mortgage-backed securities	8%

WILMINGTON, Del. — The E.I. du Pont de Nemours & Co. total benefit assets include the funds for Conoco, which du Pont took over several years ago but just placed under the same management as du Pont's fund. Total benefit assets increased 15.9% to $16.459 billion from $14.205 billion for the 12 months ended Sept. 30. As of Oct. 31, total assets were $15.133 billion, reflecting the market crash and the company's movement of $1 billion out of equities during September. The percentage in stocks was down and the portion in bonds was up as a result of market conditions.

Equity managers: Fred Alger; Batterymarch; GAMCO; Helman Jordan; J.P.Morgan; Rogers Casey Barksdale.

Fixed-income managers: John Hancock; Solomon Asset.

Real estate managers: First RepublicBank, Hancock, J.P. Morgan.

The primary master custodian is Wilmington Trust.

Key personnel overseeing the investment management of the fund are Keith E. Tucker, vice president; Edward J. Bassett, director of equity investments; and Lawrence R. Starrall, director of fixed-income investments.

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Eastern Airlines Inc.

	($ millions)
Total assets*	2,565
Defined benefit	1,500
Defined contribution	1,065
Employer contributions	na
Benefit payments	na
**P&I Age* estimate*	
Alternative investments:	
Oil and gas	10
Asset mix:	
Stocks	60%
Bonds	10%
Real estate equity	23%
Other	7%

BOSTON — Assets in the Eastern Air Lines Variable Benefit Retirement Plan for Pilots grew 21.9% to $1.065 billion as of Sept. 30 from the $874 million reported a year earlier. Data for Eastern's defined benefit plans were not available.

As of Sept. 30, managers for the pilots variable-benefit plan were:

Equity managers: Amoskeag National Bank; Atlantic Century; Brandywine; Campbell Advisors; Capital Guardian; Cramer Rosenthal & McGlynn; Hawthorne; National Investment Services; Thorndike, Doran; Waite & Correnti.

Fixed-income managers: Capital Guardian; Hawthorne.

Real estate managers: Hawthorne; NCNB; Trinity Advisors.

The custodian is State Street Bank; NCNB provides custodial services for real estate assets.

Key personnel overseeing the investment management of the fund are Charles G. Dyer, director; and Polly V. Fawcett and N. Allen Taylor, associates.

Eastman Kodak Co.

	($ millions)
Total assets*	8,264
Defined benefit	6,643
401(k)	1,621
Employer contributions	na
Benefit payments	na
**P&I Age* estimate*	
Alternative investments:	
Real estate equity	400
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67%
Bonds	1%
Cash equivalents	4%
Real estate equity	6%
Annuities	19%
Other	3%

ROCHESTER, N.Y. — *Pensions & Investment Age* estimates total employee benefit assets at Eastman Kodak Co. rose 24.6% to $8.264 billion from $6.631 billion during the 12-month period ended Sept. 30, 1987. During the same period, it is estimated defined benefit assets increased 25% to $6.643 billion from $5.309 billion.

Managers as of Jan. 1 were:

Equity managers: American National Bank; Analytic; Baker, Nye; Sanford C. Bernstein; Boston Safe; Brignoli, Curley & Roberts; Fidelity Management Trust; McKenzie Walker; J.P. Morgan; Neuberger & Berman; T. Rowe Price; PRIMECAP; Rogers, Casey & Barksdale; Rosenberg Institutional; TCW; Value Line; and Waddell & Reed.

(Global): Rogers, Casey & Barksdale and Templeton.

Real estate managers: Aetna; Equitable; Goldman, Sachs; JMB; Lehndorff & Babson; National Life Insurance; PSI Institutional; and RREEF.

Annuity manager: Metropolitan Life.

Oil & gas managers: Chase Investors and J.P. Morgan.

Capital growth manager: John Hancock.

The master trustee is Boston Safe Deposit.

Key personnel overseeing the investment management of the fund are Russell L. Olson, director-pension investments, and A. Duff Lewis Jr., pension investment coordinator.

Church Pension Fund (Episcopal)

	($ millions)
Total assets	1,488
Defined contribution	1,488
Employer contributions	45
Benefit payments	36
Portfolio insurance	900
In-house assets:	
Equities	50
Short term	50
Alternative investments:	
International equities	40
Real estate equity	1
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	59%
Bonds	35%
Cash equivalents	5%
Real estate equity	1%

NEW YORK — The Episcopal Church Pension Fund's total employee benefit assets increased about 19% to $1.488 billion from $1.25 billion for the year ended Sept. 30.

The assets fell 4.6% to $1.42 billion for the period Sept. 30 to Oct. 31, according to Robert A. Robinson, president of the fund. He attributed the relatively mild loss to the fund's dynamic hedging program.

Equity managers: (domestic) Alliance and J.P. Morgan. (International) J.P. Morgan.

Fixed-income manager: J.P. Morgan.

Real estate manager: J.P. Morgan.

The master trustee is J.P. Morgan.

Key personnel overseeing the investment management of the fund are Mr. Robinson; Walter F. Donnelly, executive vice president; and Frank I. Squeri, senior vice president.

Exxon Corp.

	($ millions)
Total assets	8,505
Defined benefit	3,965
Thrift or savings/401(k)	3,933
ESOP	607
Employer contributions	103
Benefit payments	400
In-house assets:	
Equities	1,387
Fixed income	199
Short term	53
Passive investments:	
Indexed stocks	2,128
Indexed bonds	377
Alternative investments:	
International equities	341
Venture capital	55
Oil and gas	29
Real estate equity	427
Mortgage-backed securities	132
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	66%
Bonds	10%
Cash equivalents	1%
Real estate equity	11%
Mortgage-backed securities	3%
Annuities	8%
Oil and gas	1%

NEW YORK — Exxon Corp.'s total employee benefit assets during the 12 months ended Sept. 30 increased 12.6% to $8.505 billion from $7.55 billion. Defined benefit assets rose 7% during the same period, to $3.965 billion from $3.702 billion.

Pension officials would not divulge how the fund fared during the market crash.

Equity managers: Sanford C. Bernstein; Citibank; Fidelity; Morgan Grenfell; State Street Bank; Trinity; and Wells Fargo.

Fixed-income managers: Chase Investors; Lehman Asset; and State Street Research.

Real estate managers: Aetna; Corporate Property Investors; Equitable; First Republicbank; and Prudential.

Insured reserves managers: Aetna; Equitable; Hancock; Prudential; and Travelers.

Royalties managers: First City National Bank and Louisiana National Bank.

The master trustee is Irving Trust.

Key personnel overseeing the investment management of the fund are W. Allen Harrison, assistant treasurer; James E. Bayne, manager-trust and benefits finance; and Margie M. Wang, senior financial analyst.

Pensions & Investment Age will highlight alternative investments in the May 30 issue.

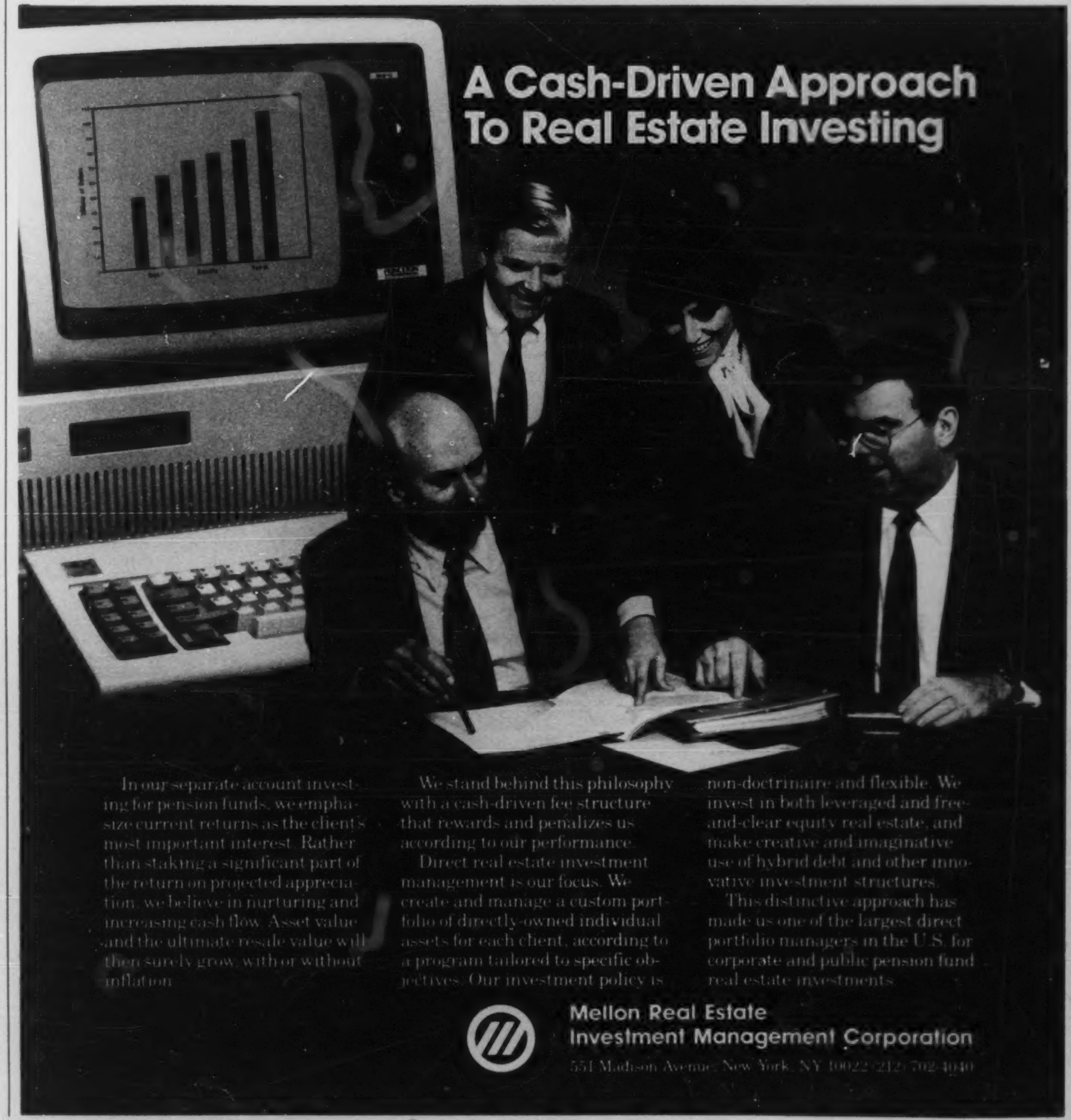
F

Florida Power & Light Co.

	($ millions)
Total assets	1,746
Defined benefit	1,212
Defined contribution	175
Thrift or savings	359
Passive investments:	
Indexed stocks	192
Indexed bonds	141
Alternative investments:	
International equities	147
Real estate equity	34
Asset mix:	
Stocks	76%
Bonds	19%
Cash equivalents	2%
Real estate equity	3%

MIAMI — Assets of the Florida Power & Light Co. increased 15.7% in the year ended Sept. 30, to $1.746 billion from $1.509 billion. The defined benefit assets increased by the same amount, to $1.212 billion from $1.047 billion during the same period. The company would not release its asset size as of Oct. 31.

Equity managers: General American Investors; J.P. Morgan; Roanoke; Rogers, Casey & Barksdale; Fayez Sarofim; Donald Smith; and Wells Fargo Investment.



In our separate account investing for pension funds, we emphasize current returns as the client's most important interest. Rather than staking a significant part of the return on projected appreciation, we believe in nurturing and increasing cash flow. Asset value and the ultimate resale value will then surely grow, with or without inflation.

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This distinctive approach has made us one of the largest direct portfolio managers in the U.S. for corporate and public pension fund real estate investments.

Mellon Real Estate
Investment Management Corporation
551 Madison Avenue, New York, NY 10022 (212) 702-4040

Fixed-income managers: Wells Fargo Investment and Western Asset.

Real estate managers: JMB; McMahan; and RREEF.

The master trustee is Wachovia Bank & Trust; the investment consultant is Rogers, Casey & Barksdale.

Key personnel overseeing the investment management of the fund are E.L. Hoffman, director of finance and treasurer, and R.A. Kaminsky, coordinator of investment funds.

Florida State Board of Administration

	($ millions)
Total assets*	13,700
Defined benefit	13,700
Employer contributions	696
Benefit payments	529
In-house assets:	
Equities	2,949
Fixed income	4,257
Short term	175
Other	84
Passive investments:	
Indexed stocks	4,301
Alternative investments:	
Private placements	255
Real estate equity	550
Mortgage-backed securities	1,455
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	52%
Bonds	29.9%
Cash equivalents	3.8%
Real estate equity	3.7%
Mortgage-backed securities	10.6%

*as of June 30, 1987

TALLAHASSEE, Fla. — The assets of the Florida State Board of Administration totaled $13.7 billion as of June 30, an increase of 18.6% from the $11.544 billion reported Sept. 30, 1986.

Equity managers: Fred Alger; Alliance; Ariel; Barnett Bank; Barrow, Hanley, Mewhinney & Strauss; Bear Stearns; Delaware Investment; Denver; Eagle; IDS; INVESCO; Lazard Freres; Prudential; Stein, Roe & Farnham; Wells Fargo; and Westwood.

Fixed-income manager: Alliance.

Real estate managers: Aetna; Equitable; First Chicago; Goldman, Sachs; Hancock; LaSalle; and Prudential.

The master custodian is Citicorp; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Fred E. Loopman, acting executive director, and Jack Madden, deputy executive director-administration.

Ford Motor Co.

	($ millions)
Total assets	19,800
Defined benefit	15,700
Thrift or savings/401(k)	3,400
TRASOP	700
Employer contributions	900
Benefit payments	850
In-house assets:	
Fixed income	1,000
Alternative investments:	
Venture capital	50
Oil and gas	15
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60%
Bonds	25%
Cash	10%
Real estate equity	5%

DEARBORN, Mich. — Ford Motor Co. had total employee benefit assets of $19.8 billion as of Sept. 30, an increase of 35.6% from $14.6 billion the previous year. Defined benefit assets totaled $15.7 billion as of Sept. 30, up 28.7% from $12.2 billion a year earlier.

Defined benefit assets dropped 15.29% to $13.3 billion as of Nov. 1. Ford officials declined to comment on any planned changes in the fund's asset mix.

Equity managers: Alliance; Ariel; Sanford C. Bernstein; Capital Guardian; Chase Investors; Concord; Dewey Square; Dreman; Fidelity; First RepublicBank; Manufacturers Bank; Mitchell Hutchins; J.P. Morgan; PRIMECAP; Sarofim; Siebel; and State Street Research.

Fixed-income managers: Capital Guardian; Dewey Square; J.P. Morgan; T. Rowe Price; Sarofim; and State Street Research.

Real estate managers: Aetna; Bank of Boston; CIGNA; LaSalle; J.P. Morgan; NCNB; Public Storage; and Security Capital.

The master trustee is Manufacturers National Bank of Detroit.

Key personnel overseeing the investment management of the fund are M.E. Maertens, manager-trust investments, and P.E. Sharp, assistant treasurer.

G

GenCorp Inc.

	($ millions)
Total assets	1,777
Defined benefit	1,396
Thrift or savings/401(k)	345
ESOP	36
Benefit payments	80
In-house assets	922

FAIRLAWN, Ohio — The total employee benefit assets of GenCorp Inc. increased 16.5% to $1.777 billion from $1.525 billion in the year ended Sept. 30. Defined benefit assets during that period grew 15% to $1.396 billion from $1.214 billion.

The total asset value dropped 8.9% to $1.619 billion as of Oct. 31, according to Richard A. Nelson, assistant to the chairman of investment boards, while defined benefit assets decreased 8.2% to $1.281 billion.

Equity managers: J.P. Morgan; Round Hill; and Wilkens & Nanovic.

Fixed-income managers: J.P. Morgan; Round Hill; Wilkens & Nanovic.

Real estate managers: Landauer and RREEF.

The master custodians are First National Bank of Ohio and Bank of America.

Key personnel overseeing the investment management of the fund are John O'Neil, chairman-investment board; Robert M. Smith, vice chairman-investment boards; and Phyllis M. Chelovitz, member-investment boards.

General Dynamics Corp.

	($ millions)
Total assets	4,800
Defined benefit	3,200
Defined contribution	1,600
Employer contributions	150
Benefit payments	100
In-house assets:	
Equities	200
Fixed income	1,500
Other	150
Passive investments:	
Indexed stocks	150
Indexed bonds	210
GICs	150
Alternative investments:	
Mortgage-backed securities	50
Asset mix:	
Stocks	45%
Bonds	50%
GICs	5%

ST.LOUIS — General Dynamics Corp.'s total benefit assets and pension assets grew 23% to $4.8 billion as of Sept. 30 from $3.9 billion the previous year. Defined benefit assets grew 28% to $3.2 billion from $2.5 billion.

Statistics on how the fund fared during October were not available.

Equity managers: Alliance; Anderson, Hoagland; Ardsley Partners; Breen; Campbell Advisors; Delaware Investment; First Manhattan; Jennison Associates; Lazard Freres; Miller, Anderson & Sherrerd; J.P. Morgan; Rosenberg Institutional Equity; Sasco Capital; Sit Investment, TCW Asset Management; Trinity; and Wells Fargo.

Fixed-income managers: Bank IV; Centerre Trust; and Discount Advisers; and Mercantile Trust.

GIC managers: Aetna; Equitable; Hancock; Mutual Benefit; and Travelers.

The master trustee is Chase Manhattan Bank.

Key personnel overseeing the investment management of the fund are Charles D. Walbrandt, staff vice president-trust investment operation; and Rebecca J. Roesch, manager-trust investment operation.

General Electric Co.

	($ millions)
Total assets	27,300
Defined benefit	22,100
Thrift or savings/401(k)	4,700
ESOPs	500
In-house assets:	
Equities	9,100
Fixed income	5,200
Short term	2,600
Other	3,400
Passive investments:	
Indexed stocks	3,700
Dedicated/immunized	1,700
GICs	600
Alternative investments:	
International equities	1,300
International bonds	500
Other international	100
Private placement/venture capital	1,400
LBOs	600
Real estate	2,000
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	45%
Bonds	25%
Cash equivalents	15%
Other	15%

STAMFORD, Conn. — General Electric Co.'s total employee benefit assets and pension assets grew 19.3% to $27.3 billion as of Sept. 30 from $22.891 billion the previous year. Defined benefit assets rose 17.5%, to $22.1 billion from $18.801 billion from the previous year.

Total assets after the market drop of October were $24.8 billion, a drop of 9%.

Ninety-two percent of total pension assets are managed internally by GE Investment Corp., an investment management affiliate owned by GE Co. GE uses outside managers in selected areas but declines to identify them.

Master custodian of the GE plan is Chase Manhattan; master trustee of the RCA plan is Bankers Trust.

Key personnel overseeing the investment management of the fund are D.F. Frey, vice president and treasurer of GE Co. and president of GEIC; A.S. Bahr, executive vice president-equity investments; and J.H. Myers, executive vice president-fixed income and corporate investments.

General Foods Corp.

	($ millions)
Total assets	2,676
Defined benefit	2,263
Thrift or savings	413
Employer contributions	15
Benefit payments	75
Passive investments:	
Indexed stocks	543
GICs	239
Alternative investments:	
International equities	82
Venture capital	30
Real estate equity	70
Mortgage-backed securities	6
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	63.3%
Bonds	10%
Cash equivalents	10.8%
Real estate equity	3.1%
Mortgage-backed securities	2%
GICs	10.8%

The Creation of Extraordinary Value is the Result of Extraordinary Vision

- - the Rembrandt Philosophy

A profitable investment portfolio, like the great artist's work on canvas, is rarely the consequence of whim or chance. At Tomlin Properties, we have that extraordinary vision to create extraordinary value with exceptional returns through *17 years of investing in Predevelopment Land.*

"Heaven forbid that I should ever see things the way they do!"

Rembrandt worked to see what few around him saw. And he created masterpieces. At Tomlin Properties, we've cultivated an approach that looks beyond what "conventional wisdom" might suggest. While some view land as risky business, we've created an approach that proves this is a bit short sighted. With over eighty investments in predevelopment land, *we've proven that predevelopment land is a prudent investment.*

"Secret . . . fiddlesticks! I start with a formula, and work to prove that it is correct."

Don't misunderstand. When we speak of "vision" we're not referring to some nebulous "feeling" we get about a parcel of land. The Tomlin formula is based on *detailed research, intensive management* and *hard work.* That experience has been the cornerstone of our success. With a keen eye on the nation's prime growth markets, we begin with the parameters of a cautious investment clearly in focus: location of the land, and timing of the acquisition. Assessed correctly, these are the factors which *minimize risk* and maximize return. Additionally, we only invest in those cities where we have *on-site local management* offices. *Dallas, Los Angeles, Houston, Atlanta, Phoenix and Washington*, D.C. Local Tomlin executives who know the market and who know how to maximize each property's potential. Time and time again our clients have enjoyed the fruits of this approach.

"Perhaps 400 years from now, if any of my pictures are left, they will say, 'this fellow was going in the right direction'."

Rembrandt knew that time was the ultimate test of the value of his art. Fortunately we're not looking at a 400 year waiting period. Instead, our average investment period is much shorter than you might expect. History tells us that land has been profitable for the patient sophisticated investor. And while not all land is suitable for capital growth investments, we live in a world where predevelopment land in ideal locations is a diminishing resource. Its appreciation potential is great, while the measured risks are comparable to the most traditionally conservative portfolio components. And Tomlin Investments in predevelopment land continually outperform other forms of real estate, stocks, bonds, and treasury bills. *Our clients agree — we've passed the test of time. And the result is extraordinary value.*

TP

TOMLIN PROPERTIES, INC.
George M. Dishman, Partner
214/239-8041
5001 Spring Valley Rd., Ste 1000E LB10
Dallas, Texas 75244
Tlx: 735085 TOMPROP VD Fax: 7029786

WHITE PLAINS, N.Y. — The General Foods plan grew 7% during the year ended Sept. 30, to $2.676 billion from $2.5 billion. The defined benefit assets grew 13% in the same period, to $2.263 billion from $2 billion. But after the crash, those gains were lost as the defined benefit plan decreased by 14%.

The equity portion of the portfolio was reduced by 5% as a result of the crash, and the difference was made up in bonds, cash, GICs and real estate.

Equity managers: Alliance; Bankers Trust; Batterymarch; BEA; Chase Investors; Citibank; First Wisconsin; Jennison Associates; Thorndike, Doran, Paine & Lewis; and Trinity Investment.

Fixed-income managers: Aetna; Bankers Trust; Metropolitan Life; J.P. Morgan; PIMCO; and Prudential.

Real estate managers: JMB; J.P. Morgan; TCW; and New Court Properties.

International managers: J.P. Morgan and N.M. Rothschild.

Venture capital managers: DLJ; John Hancock; and Consumer Ventures.

The master trustee is Northern Trust; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are Roger Hostetler, assistant treasurer-benefit funds and John L. Hilty, manager-benefit fund analysis.

General Motors Corp.

	($ millions)
Total assets	40,000
Defined benefit	34,900
Thrift or savings	4,900
Other	200
Employer contributions	na
Benefit payments	na

NEW YORK — General Motors Corp. had $40 billion in total employee benefit assets as of Sept. 30, an increase of 21.6% from $32.9 billion the previous year. Defined benefit assets increased 21.6% to $34.9 billion from $28.7 billion a year earlier.

Managers: ABD International; Aetna Life; Aldrich Eastman & Waltch; American National Bank; AmeriTrust; Bank of America; Bankers Trust; Baring America; Baring International; Barrow, Hanley, Mewhinney & Strauss; Batterymarch; BEA; Beekman; Boston Co. Energy; Boston Co. Real Estate; Capital Guardian; Chase Manhattan; Citibank; Daiwa International; Delaware Investment; Dimensional Fund; Fidelity International; Fidelity Management; First National Bank of Boston; First National Bank of Chicago; Franklin Portfolio; Frontier; G.T. Capital; Harris Trust; Hill Samuel; W.R. Huff; InterFirst Bank of Dallas; INVESCO; Jennison; Kleinwort Benson International; Landauer; Lazard Freres; Lehman Management; Lincoln Capital; MacKay-Shields; Magten; Mellon Bank; Merrill Lynch; Metropolitan Life; Morgan Grenfell; Morgan Guaranty Trust; Morgan Stanley Asset; National Bank of Detroit; Nomura Capital; Provident Investment Counsel; Prudential; Rowe Price-Fleming; N.M. Rothschild; Schroder Capital; Solomon Asset; TCW Asset; United Capital; Value Line; Weiss, Peck & Greer; and Wells Fargo.

The master trustees are Bankers Trust, Mellon and Chase Manhattan.

Key personnel overseeing the investment management of the fund are W. Gordon Binns Jr., vice president and chief investment officer; and R. Charles Tschampion, director-investment manager relations.

Employees' Retirement System of Georgia

	($ millions)
Total assets	2,770
Defined benefit	2,770
Employer contributions	168
Benefit payments	105
In-house assets:	
Equities	1,258
Fixed income	1,351
Short term	159
Other	2
Passive investments:	
Indexed stocks	141
Alternative investments:	
Real estate equity	2
Mortgages	8
Asset mix:	
Stocks	44.5%
Bonds	49%
Cash equivalents	6%
Real estate equity	0.1%
Mortgages	0.4%

ATLANTA — The Employees' Retirement System of Georgia reported an increase in assets of 19.7% as of Sept. 30, to $2.77 billion from $2.315 billion the previous year. Because of the market drop, however, assets declined 7% to $2.578 billion as of Oct. 31. As of Oct. 31, the fund's stock and bond allocations had shifted to 36.5% and 57% respectively.

Equity advisers: First Wachovia; INVESCO; and Thorndike, Doran, Paine & Lewis.

The master trustee is First Wachovia.

Key personnel overseeing the investment management of the fund are Abe Domain, director, and Graham R. Lynch, director-investment services division.

Teachers Retirement System of Georgia

	($ millions)
Total assets	7,080
Defined benefit	7,080
Employer contributions	390
Benefit payments	260
In-house assets:	
Equities	3,306
Fixed income	3,405
Short term	367
Other	2
Passive investments:	
Indexed stocks	356
Alternative investments:	
Private placements	167
Real estate equity	2
Mortgages	25
Asset mix:	
Stocks	47%
Bonds	48%
Cash equivalents	5%

ATLANTA — Total assets of the Teachers Retirement System of Georgia increased 16.7% for the 12 months ended Sept. 30 to $7.08 billion from $6.067 billion.

Because of market volatility during October, the assets dropped 7% to $6.56 billion as of Oct. 31; the stock allocation dropped to 41% and the bond allocation rose to 54%.

Equity advisers: Atlanta Capital; C&S Investment; INVESCO; Trusco; Thorndike, Doran, Paine & Lewis; and Wall, Patterson, Hamilton & Allen.

The master trustee is C&S Trust & Investment Management.

Key personnel overseeing the investment management of the fund are Gerald S. Gilbert, executive secretary-treasurer; Graham R. Lynch, director-investment service division; and C.W. Cary, assistant director-investment service division.

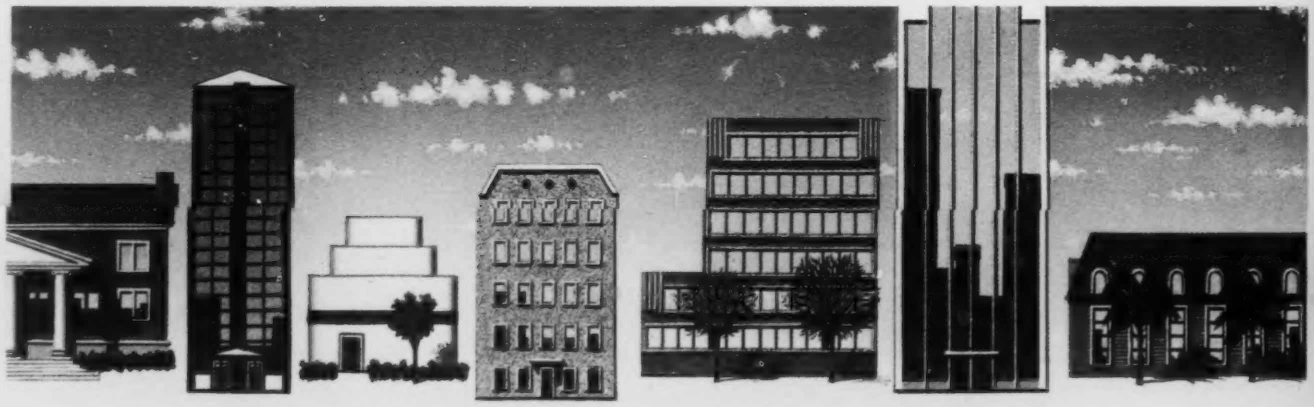
The Goodyear Tire & Rubber Co.

	($ millions)
Total assets	1,783
Defined benefit	1,527
401(k)	195
SESOP	61
Employer contributions	13
Benefit payments	109
Passive investments:	
Indexed stocks	113
Alternative investments:	
International bonds	11
Private placements	152
Real estate equity	59
Mortgages	41
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	36.5%
Bonds	23%
Cash equivalents	28.5%
Real estate equity	3.7%
Mortgages	2.7%
Annuities	5.6%

AKRON, Ohio — Goodyear Tire & Rubber Co. had $1.783 billion in employee benefit assets as of Sept. 30, an increase of 7.5% from $1.658 billion a year earlier. The company's defined benefit assets totaled $1.527 billion as of Sept. 30, up 2.7% from $1.487 billion the previous year.

Asset totals as of Nov. 1 were not available. No changes in the fund's asset mix were made or were anticipated, according to a company official.

Equity managers: Bankers Trust;



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Concord; Dillon, Read; National City; Nicholas; Pilgrim, Baxter, Greig; Prudential Asset; State Street Research; Trust Co. of the West; and United Capital.

Fixed-income managers: Desai Capital; Equitable Life; Metropolitan; J.P. Morgan; Prudential Asset; and Travelers.

Real estate managers: J.P. Morgan and Prudential Asset.

The master custodian is Northern Trust; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Oren G. Shaffer, group executive vice president; George R. Hargreaves, vice president and treasurer; and Duane H. Smith, manager-benefit controls and investments.

Grumman Corp.

	($ millions)
Total assets	2,800
Defined benefit	1,950
Thrift or savings	850
Employer contributions	55
Benefit payments	65
In-house assets:	
Equities	800
Fixed income	650
Short term	400
Alternative investments:	
Venture capital	20
LBOs	10
Real estate equity	90
Mortgage-backed securities	100
Asset mix:	
Stocks	40%
Bonds	30%
Cash equivalents	20%
Real estate equity	5%
Mortgage-backed securities	5%

BETHPAGE, N.Y. — Grumman Corp.'s total employee benefit assets grew almost 16.6% during the year ended Sept. 30 to $2.8 billion from $2.4 billion. Defined benefit assets grew 15.8% to $1.95 billion from $1.684 billion during the same period.

Because of the October stock market crash, defined benefit assets fell 7.7% to $1.8 billion as of Oct. 31.

Equity manager: First Manhattan.

Fixed-income manager: Fiduciary Trust.

Real estate managers: Equitable; CIGNA; and Prudential.

The master trustee is Bank of New York.

William R. Parmentier, assistant treasurer and investment manager, oversees plan investments.

GTE Corp.

	($ millions)
Total assets	11,065
Defined benefit	9,668
Thrift or savings	92
401(k)	1,305
Employer contributions	89
Benefit payments	156
In-house assets:	
Equities	479
Fixed income	1,435
Passive investments:	
Indexed stocks	1,696
Indexed bonds	1,433
Alternative investments:	
International equities	1,501
International bonds	309
Venture capital	182
Oil and gas	29
LBOs	126
Real estate equity	34
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	66%
Bonds	18%
Cash equivalents	11%
Real estate equity	0.5%
Other	4.5%

STAMFORD, Conn. — GTE Corp.'s total employee benefit assets grew 23.5% in the year ended Sept. 30, to $11.065 billion from $8.962 billion. Defined benefit assets alone grew 22% to $9.668 billion from $7.924 billion during the period.

But much of those gains were lost during the month of October, when the defined benefit plan dropped 15.2% to $8.2 billion.

The asset mix shifted mostly in favor of bonds and away from cash as a result of the crash, with equity at nearly the same proportion. The bond segment of the portfolio rose to 27% from 18%, while cash decreased to 2% from 11%.

Equity managers: Baker, Nye; Bankers Trust; Baring International; Sanford Bernstein; BMI; Cashman, Farrell; Concord Capital; Eagle Management; Fidelity International; First Manhattan; First Pacific Advisors; Franklin Portfolio; Frontier Capital; General American Advisers; Geocapital; Grantham, Mayo, Van Otterloo; GTE Investment; G.T. Capital; Hellman, Jordan; Hotchkis and Wiley; Hutton Capital; Investment Reserves; Johnson, Valliant & Broadfoot; Morgan Grenfell; Morgan Guaranty Trust; Oppenheimer; Pacific Financial Research; Provident Investment; Rosenberg Institutional; Rowe Price-Fleming; Donald Smith; TCW; Weiss Peck & Greer; and Wertheim-Philippe International.

Fixed-income managers: Bank of America Investment Management International; Baring America; Beutel, Goodman International; GTE Investment; PIMCO; Security Capital; and Solomon Asset.

Real estate managers: Citibank; GTE Investment; Manufacturers National; Morgan Guaranty; and State Street Bank.

Other managers: Bankers Trust; Chase Investors; Citibank; Forest Investment; GTE Investment; Investment Reserves; John Hancock Group/Forest; Fayez Sarofim; TCW Debt & Royalty Fund II; TCW.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are: John Carroll, president; Pamela McCann, vice president-pension fund management; and Frank Wilkinson, vice president-fixed income investment.

H

Halliburton Co.

	($ millions)
Total assets	2,023
Defined contribution	2,023
Benefit payments	188
In-house assets:	
GICs	750
Passive investments:	
GICs	750
Alternative investments:	
International equities	61
International bonds	7
Real estate equity	33
Mortgages	24
Hedging devices:	
Bond options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	34%
Bonds	19%
Cash equivalents	4%
Real estate equity	2%
Mortgages	1%
GICs	37%
International	3%

DALLAS — Halliburton Co.'s plan assets grew 79% during the year ended Sept. 30, to $2.023 billion from $1.130 billion, mainly because of the absorption of $700 million in plan assets from two Houston-based subsidiaries: Brown & Root Inc. and Highland Insurance Co.

Total assets decreased 7.5% as a result of the October stock market crash, to $1.87 billion as of Oct. 31.

Equity managers: INVESCO; Lehman; Fayez Sarofim; and Wentworth Hauser & Violich.

Fixed-income managers: INVESCO; Lehman; PIMCO; Fayez Sarofim; and Wentworth Hauser & Violich.

Real estate managers: Aetna and Prudential.

International manager: Schroder.

The master trustee is First RepublicBank; the investment consultant is SEI.

Nathanial H. Duffield, investment committee chairman, oversees fund investments.

Employees' Retirement System, State of Hawaii

	($ millions)
Total assets	3,400
Defined benefit	3,400
Employer contributions	152
Benefit payments	151
In-house assets:	
Equities	44
Fixed income	9
Short term	124
Other	556
Passive investments:	
Indexed stocks	244
GICs	121
Alternative investments:	
International equities	477
Real estate equity	135
Mortgages	376
Hedging devices:	
Asset mix:	
Stocks	33%
Bonds	39%
Cash equivalents	9%
Real estate equity	4%
Mortgages	11%
GICs	4%

HONOLULU — The Employees' Retirement System, State of Hawaii had $3.4 billion in defined benefit assets as of Sept. 30, an increase of 13% from $3.009 billion the previous year.

Equity managers: Alliance; Atalanta/Sosnoff; Barrow, Hanley, Mewhinney and Strauss; Delaware; Hanson; INVESCO; and McCowan.

Fixed-income managers: Lehman Management; PIMCO; Sarofim; Scudder, Stevens & Clark; Security Pacific; and Wentworth, Hauser and Violich.

Real estate managers: Aetna; CIGNA; and Metropolitan.

Other managers: Daiwa International; Mellon Index; Nomura International; and Schroder International.

The master custodian is Irving Trust; the investment consultants are SEI and Callan.

Key personnel overseeing the investment management of the fund are Stanley Siu, secretary, and David Shimabukuro, assistant secretary.

Hercules Inc.

	($ millions)
Total assets	1,603
Defined benefit	1,336
Defined contribution	2
401(k)	265
Employer contributions	13
Benefit payments	64
Passive investments:	
Indexed stocks	12
Indexed bonds	49
Dedicated/immunized	236
GICs	117
Alternative investments:	
International equities	181
Real estate equity	113
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60.9%
Bonds	21.4%
Cash equivalents	0.4%
Real estate equity	8.5%
GICs	8.8%

WILMINGTON, Del. — Hercules Inc.'s total employee benefit assets rose 17.3% in the year ended Sept. 30, to $1.603 billion from $1.367 billion. Defined benefit assets rose 13.8% to $1.336 billion from $1.174 billion.

Because of market volatility during October, total assets fell 9.7% to $1.448 billion and defined benefit assets dropped 10% to $1.198 billion as of Oct. 31. As of the same date, the asset mix had shifted as follows: Bonds rose to 32.8% from 21.4%; stocks fell to 47.4% from 60.9%; cash equivalents stayed at 0.4%; real estate went to 9.5% from 8.5% and GICs went to 9.9% from 8.8%.

Equity managers: Capital Guardian; Cooke & Bieler; Fidelity International; General American; Lazard Freres; J.P. Morgan; Marvin & Palmer; Mellon Capital and Warburg.

Fixed-income manager: R.C. Brown.

Real estate managers: Aetna; Equitable; and Prudential.

Short-term manager: Bankers Trust.

GIC managers: Aetna; Equitable; New England Life; Travelers; and Union Mutual.

The master trustee is Bankers Trust; the investment consultant is Frank Russell.

The key person overseeing the investment management of the fund is John Long, director-investments.

Hewlett Packard Co.

	($ millions)
Total assets*	1,540
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

PALO ALTO, Calif. — Employee benefit assets of Hewlett Packard Co. increased 33.9% to $1.54 billion as of Sept. 30 from $1.15 billion a year earlier, according to a *Pensions & Investment Age* estimate.

Some assets are managed internally, although the company would not reveal the amount. According to the Money Market Directory, the managers are as follows.

Managers: Capital Guardian; G.T. Capital; J.P. Morgan; PRIMECAP; Vanguard; and Wells Fargo.

The master trustee is Harris Trust.

Key personnel overseeing the investment management of the fund are Robert E. Greeley, manager-corporate investments, and Elizabeth Obershaw, senior planning and reporting analyst.

Honeywell Inc.

	($ millions)
Total assets	2,299
Defined benefit	1,877
401(k)	422
Employer contributions	23
Benefit payments	112
Passive investments:	
Indexed stocks	389
Alternative investments:	
International equities	141
International bonds	93
Venture capital	62
Oil and gas	15
LBOs	10
Private placements	213
Real estate equity	134
Mortgages	60
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	44.2%
Bonds	21.7%
Cash equivalents	11.4%
Real estate equity	7.2%
Other	15.5%

MINNEAPOLIS — As of Sept. 30, Honeywell Inc.'s total employee benefit assets increased 6.3% to $2.299 billion from $2.163 billion a year earlier. Defined benefit assets increased 9.9% during the same period, to $1.877 billion from $1.708 billion.

Equity managers: Abel/Noser; Alliance; Baring International; Forstmann-Leff; GAMCO; IDS International; Jundt/Capen; Mellon Capital; and TCW Asset.

Fixed-income manager: Fischer, Francis, Trees & Watts.

Real estate managers: Coldwell Banker; Landauer; McMahan; State Street Bank; and TCW.

Other managers: Aetna; Arscott-Norton; Associated Venture; Bridge Capital; Chase Manhattan; Cherokee Resources; Commonwealth Life; Concord Partners; Dougery Jones; First Chicago; First Reserve; Forstmann Little; John Hancock; Investech; Larimer; Morgan Holland; Narragansett; New Court Partners; Northwestern National Life; T. Rowe Price; Prudential Asset; Robertson, Coleman & Stephens; Sprout Growth; T.A. Associates; Travelers; TSA; Ventech; and Welsh Carson Anderson & Stowe.

The master trustee is Chase Manhattan; the investment consultant is Rogers, Casey & Barksdale.

Key personnel overseeing the investment management of the fund are R.T. Mall, vice president-pension fund investments, and D.W. Veverka, manager-long term investments.

National Pension Fund for Hospital and Health Care Employees

	($ millions)
Total assets*	1,797
Defined benefit assets	1,797
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

NEW YORK — Total benefit assets of the National Pension Fund for Hospital and Health Care Employees increased 12.3% in the 15 months ended Sept. 30, to $1.797 billion from $1.6 billion as of June 30, 1986, according to *Pensions & Investment Age* estimates.

Balanced managers: Lehman Management; FLA Asset Management; and Prudential.

Fixed-income manager: Amalgamated Bank.

Real estate manager: Prudential.

Key personnel overseeing the investment management of the fund are Eleanor Tilson, executive director, and Frank Williams, director-finance and administration.

City of Houston Retirement System

	($ millions)
Total assets*	1,500
Defined benefit	1,500
Employer contributions	56
Benefit payments	42
Portfolio insurance	900

*June 30, 1987

Passive investments:	
Indexed stocks	75
Alternative investments:	
International equities	66
Real estate equity	43
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	60%
Bonds	20%
Cash equivalents	15%
Real estate equity	3%
Other	2%

HOUSTON — The city of Houston's pension assets had a market value of $1.5 billion on June 30, 1987, a gain of 24.7% from the $1.203 billion reported as of Sept. 30, 1986.

At the end of October, the retirement fund lost about 10% of the market value of the assets it held Oct. 18, the day before the stock market plunge.

Different money managers work for the police, fire and municipal components of the city retirement fund.

Equity managers: Barrow, Hanley (police); Benchmark (fire); Eaton Vance (police); Gulf Investment (fire); IDS (police); Loomis Sayles (municipal and police); Mellon Capital (fire); Siebel Capital (municipal and police); Sun Bank (municipal and police); Texas Commerce (fire and municipal); Trinity (municipal); Waddell & Reed (police).

Fixed-income managers: A.I.M. Capital (police); Investment Advisors (police); Loomis Sayles (fire); MacKay-Shields (police); Standish, Ayer & Wood (municipal); Texas Commerce Bank (fire and municipal).

International managers: Alliance Capital (municipal); IDS (municipal); Schroder Capital (police).

Option overwriting managers: Analytic (all); Balch, Hardy & Scheinman (all).

Real estate managers: Coldwell Banker (fire); Eagle Realty (police); Equitec International (municipal); Equitec Realty (fire); JMB (municipal and police); Lehndorff & Babson (fire); Public Storage (fire); TCW (fire).

Venture capital manager: Genesis (all).

The master custodians are Texas Commerce Bank (firefighters); Centerre Bank & Trust (municipal); and Bankers Trust (police).

The investment management consultant is SEI Funds Evaluation.

Key personnel overseeing the investment management of the fund are George E. Cones Jr., chairman-firemens fund; Cliff Tuttle, chairman-municipal employees fund; and Dalton Baskin, chairman-police officers fund. George T. Odum is the pension plans administrator.

Hughes Aircraft Co.

	($ millions)
Total assets*	5,400
Defined benefit	3,800
Thrift or savings/401(k)	1,600
Employer contributions	na
Benefit payments	na

*From Money Market Directory

EL SEGUNDO, Calif. — Hughes Aircraft Co. had $5.4 billion in total employee benefit assets as of June 30, 1987, according to the Money Market Directory, an increase of 25.6% from the $4.3 billion reported as of Sept. 30, 1986.

Managers: (according to MMD) BEA; Capital Guardian; Chase Investors; CNA Insurance; Coldwell Banker; Dillon, Read; Forstmann-Leff; Frontier; G.T. Capital; General American Life; Hagler, Mastrovita & Hewitt; Jennison; Kurtz Capital; Leland O'Brien Rubinstein; MacKay-Shields; McKenzie, Walker; Mellon Capital; Neuberger & Berman; Oxford Partners; T. Rowe Price; Rowe Price-Fleming; PRIMCO; PRIMECAP; RCM Capital; Reich & Tang; RREEF; Scudder, Stevens &

Clark; TCW.

The master custodian is Bankers Trust.

Key personnel overseeing the investment management of the fund are W. Allen Reed, staff vice president-investments; R.T. Smith, manager benefits.

I

IAM National Pension Fund

	($ millions)
Total assets	1,454
Defined benefit	1,454
Employer contributions	65
Benefit payments	77
Alternative investments:	
Real estate equity	44
Asset mix:	
Stocks	48.7%
Bonds	35.6%
Cash equivalents	5.1%
Real estate equity	3%
Other	7.6%

WASHINGTON — Benefit assets of the IAM National Pension Fund increased 21.4% to $1.454 billion as of Sept. 30 from $1.198 billion a year earlier.

Equity managers: Dodge & Cox; Lazard Freres; Stein Roe & Farnham; and State Street.

Fixed-income managers: Dodge & Cox; Stein Roe & Farnham; and State Street.

Real estate manager: Amivest.

The master trustee is State Street Bank.

Overseeing the investment management of the fund is Alan W. Skolnick, director.

IBM Corp.

	($ millions)
Total assets	22,457
Defined benefit	20,101
Thrift or savings/401(k)	2,356
Employer contributions	691
Benefit payments	465
In-house assets	10,649
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

STAMFORD, Conn. — IBM Corp.'s total employee benefit assets grew 23.5% for the year ended Sept. 30, to $22.457 billion from $18.191 billion. Defined benefit assets grew 20.8%, to $20.101 billion from $16.64 billion. Fund officials would not release data as of Oct. 31.

Equity managers: Alliance; Bankers Trust; Citibank; Concord Capital; Capital Guardian; Delaware Investment Advisers; Dimensional Fund Advisors; Forstmann Little; Franklin Portfolio; G.T. Capital; Independence Investment; Jennison Associates; John Hancock Venture Capital; PM Portfolio; Resource Investors; Rowe Price-Fleming; Sasco Capital; Solomon Asset; State Street Bank; TCW Asset; T. Rowe Price; Warburg Pincus; and Wellington Management.

Fixed-income managers: Capital Guardian; Fisher, Francis, Trees & Watts; and Jennison Associates.

Real estate managers: Equitable; Prudential; and RREEF.

The master trustee is Chase Manhattan; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are J. Grills, assistant treasurer; W.V. Hoyt, director-investment strategy; and A.M. Shagory, director-investment research and operations.

Public Employee Retirement System of Idaho

	($ millions)
Total assets	1,309
Defined benefit	1,309
Employer contributions	73
Benefit payments	69
Passive investments:	
Indexed stocks	233
Alternative investments:	
Private placements	9
Real estate equity	92
Mortgages	76
Mortgage-backed securities	3
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	57.6%
Bonds	22.6%
Cash equivalents	6.5%
Real estate equity	7.1%
Mortgages	5.3%
Mortgage-backed securities	0.2%
Private placements	0.7%

BOISE, Idaho — The Public Employee Retirement System of Idaho reported an increase of 19% in benefit assets as of Sept. 30, to $1.309 billion from $1.1 billion a year earlier.

Equity managers: Columbus Circle; Eaton Vance; John C. Hunt; Hutton; Investment Advisors; Matrix; Newell; Prudential; Frank Russell Trust; and Wellington.

Fixed-income managers: BEA; Sanford Bernstein; MacKay Shields; and Miller Anderson & Sherrerd.

Real estate managers: Equitable; First Interstate Bank; First Security Bank; Idaho First National Bank; idaho Bank & Trust; and Prudential.

The master custodian is Frank Russell Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Lawrence J. Carson II, executive director, and Ronald V. Crouch, assistant director-fiscal.

Illinois Municipal Retirement Fund

	($ millions)
Total assets	3,536
Defined benefit	3,536
Employer contributions	125
Benefit payments	135
In-house assets:	
Short term	125
Passive investments:	
Indexed stocks	409
Alternative investments:	
International equities	303
International bonds	90
Venture capital	16
Real estate equity	138
Asset mix:	
Stocks	47.5%
Bonds	37%
Cash equivalents	11%
Real estate equity	4%
Venture capital	0.5%

CHICAGO — The Illinois Municipal Retirement Fund had $3.536 billion in defined benefit assets as of Sept. 30, an increase of 18.7% from $2.98 billion the previous year. As a result of the market turmoil during October, the fund's assets fell 9.7% to $3.192 billion as of Nov. 1.

Equity managers: American National, Chicago; Baring; Dillon, Read; Dimensional; Fidelity Management Trust; MacKay-Shields; Nomura; and Schroder Capital.

Fixed-income managers: Julius Baer; Criterion; Fidelity Management Trust; Neuberger and Berman; and Payden & Rygel.

Real estate managers: First Chicago Investment; JMB; LaSalle; Security Capital; and TCW.

Venture capital managers: Abbott; Centennial; First Chicago Investment; and Oxford.

The master trustee is Harris Trust; the investment consultant is William M. Mercer-Meidinger-Hansen Inc.

Key personnel overseeing the investment management of the fund are Robert L. Cusma, executive director; Hiroshige Mori, assistant director-investments; and Walter J. Koziol, investment manager.

Illinois State Board of Investment

	($ millions)
Total assets*	2,600
Defined benefit	2,600
Employer contributions	26
Benefit payments	na
*as of June 30, 1987	
In-house assets:	
Equities	419
Fixed income	964
Short term	265
Alternative investments:	
International equities	40
Venture capital	13
LBOs	15
Real estate equity	175
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	43.5%

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Bonds	37.8%
Cash equivalents	11%
Real estate equity	6.7%
Venture capital	1%

CHICAGO — The Illinois State Board of Investment's total employee benefit assets increased 14% to $2.6 billion as of June 30 from the $2.28 billion reported as of Sept. 30, 1986.

Equity managers: Ariel; Cooke & Bieler; Disciplined; Fidelity; Lazard; Lincoln; Newbold's; TCW; Templeton; and Trinity.

Real estate managers: Aetna; First Chicago; Heitman; JMB; PSI; and VMS.

Venture capital managers: Frontenac; Golder, Thoma & Cressey; Hancock; and Menlo.

LBO manager: KKR.

The master custodian is Northern Trust; Stratford Advisers is the investment consultant for special situations.

Key personnel overseeing the investment management of the fund are Robert Harmon, director; Larry Darlington, fixed-income portfolio manager, and Bruce Poznak and Scott Pape, equity portfolio managers.

Teachers' Retirement System of the State of Illinois

	($ millions)
Total assets	7,053
Defined benefit	7,053
Employer contributions	217
Benefit payments	451
Passive investments:	
Indexed stocks	2,225
Indexed bonds	684
Alternative investments:	
International equities	451
International bonds	75
Venture capital	43
Real estate equity	245
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	50.6%
Bonds	34.8%
Cash equivalents	10.5%
Real estate equity	3.5%
Venture capital	0.6%

SPRINGFIELD, Ill. — The Teachers' Retirement System of the State of Illinois had defined benefit assets of $7.053 billion as of Sept. 30, an increase of 18.5% from $5.952 billion the previous year.

Equity managers (Domestic): Alliance; American National of Chicago; Ariel; Capital Supervisors; Cedar Hill; and Kemper Financial.

(International): Kemper-Murray Johnstone and State Street Bank.

Fixed-income managers: Bear Stearns; Dreyfus Management; Marine Investment; PIMCO; and State Street Bank.

Real estate managers: Bennett & Kahnweiler; F.I.A.; First Chicago Investment; JMB; and TCW.

Venture capital manager: Frontenac.

The master trustee is Harris Trust; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Samuel W. Anderson, executive director, and Charles F. Hofer, investment officer.

Consultants: Oct. 17.

State Universities Retirement System of Illinois

	($ millions)
Total assets	3,016
Defined benefit	3,016
Employer contributions	70
Benefit payments	130
Passive investments:	
Indexed stocks	942
Indexed bonds	465
GICs	27
Alternative investments:	
International equities	211
Real estate equity	225
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	55%
Bonds	36%
Real estate equity	8%
GICs	1%

CHAMPAIGN, Ill. — The State Universities Retirement System of Illinois' benefit assets increased 21.5% to $3.016 billion from $2.483 billion for the year ended Sept. 30.

The assets fell 10.5% to $2.7 billion as of Oct. 31, according to Kenneth L. Codlin, investment officer.

Equity managers: Batterymarch; PIMCO; Fayez Sarofim; and Wells Fargo.

Fixed-income managers: PIMCO and Wells Fargo.

Real estate managers: Aetna; JMB; and RREEF.

The fund's custodian is Northern Trust; Ennis, Knupp is the investment management consultant.

Key personnel overseeing the investment management of the fund are Mr. Codlin and Jeanne Valcik, pension analyst.

Public Employees' Retirement Fund of Indiana

	($ millions)
Total assets	2,158
Defined benefit	1,708
Defined contribution	450
Employer contributions	105
Benefit payments	95
Passive investments:	
Indexed bonds	400
Private placements	15
Mortgage-backed securities	240
Asset mix:	
Bonds	81%
Cash equivalents	7%
Mortgage-backed securities	12%

INDIANAPOLIS — Assets of the Public Employees' Retirement Fund of Indiana increased to $2.158 billion for the year ended Sept. 30, 1987, up 6.8% from the $2.02 billion reported for the year ended Sept. 30, 1986.

Fixed-income managers: Bank One, Indianapolis; Indiana National Bank; Lehman Management; T. Rowe Price; and Prime Capital.

The investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Laurence H. Earle II, executive secretary, and Michael A. Cherry, controller.

Inland Steel Industries

	($ millions)
Total assets	1,840
Defined benefit	1,581
Thrift or savings	259
Employer contributions	9
Benefit payments	97
Passive investments:	
Indexed stocks	43
Dedicated/immunized	374
GICs	123
Alternative investments:	
International equities	131
Venture capital	5
Real estate equity	97
Mortgage-backed securities	73
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	53%
Bonds	18.1%
Cash equivalents	10.4%
Real estate equity	6.2%
Mortgage-backed securities	4.5%
GICs	7.8%

CHICAGO — Inland Steel Industries employee benefit assets increased 11.4% to $1.84 billion as of Sept. 30 from $1.652 billion a year earlier. Defined benefit assets increased 14.3% to $1.581 billion from $1.383 billion.

Allan R. Phillips, consultant for the fund, estimated total assets dropped 11% as of Oct. 31, with defined benefit assets alone dropping almost 12%. After the crash, price changes and new investments of cash altered the asset mix. The mix as of Oct. 31 was 46% stocks, 27.4% bonds and mortgage-backed securities, 10.6% cash, 7.1% real estate equity and 8.9% GICs.

Equity managers: (Domestic) Sanford C. Bernstein; Citicorp Investment; Dillon, Read; Dimensional; First Chicago Investment; INVESCO; Oppenheimer Capital; Putnam Advisory; State Street Research; and Waddell & Reed.

(International): Baring; First Chicago International; Putnam International.

Fixed-income managers: Lincoln Income Group.

Real estate managers: Equitable; JMB; and Prudential.

The master trustee is Northern Trust; the investment consultant is DeMarche Associates.

Key personnel overseeing the investment management of the fund are Jay E. Dittus, treasurer; Richard J. Schutter, manager-pension investments; and Vicki L. Avril, assistant manager-pension investments.

International Paper Co.

	($ millions)
Total assets	2,500
Defined benefit	2,000
Defined contribution	500
Employer contributions	11
Benefit payments	85
Portfolio insurance	500
Passive investments:	
GICs	45
Alternative investments:	
International equities	40
Real estate equity	133
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y

NEW YORK — Assets of the International Paper Co. fund jumped 59.5% for the year ended Sept. 30, to $2.5 billion from $1.567 billion for the previous year. Data on the effect of the stock market volatility on the assets and the asset mix were not available.

Equity managers: Avatar; Sanford Bernstein; Geewax, Terker; Investment Counselors of Maryland; Manning & Napier; Miller, Anderson & Sherrerd; Neuberger & Berman; Provident Investment Counsel; TCW Asset; United Capital; and Yeager Wood & Marshall.

Fixed-income managers: J.P. Morgan; PIMCO; and State Sreet Research.

Real estate managers: Aldrich Eastman & Waltch; LaSalle Advisors; and RREEF.

Other: TSA Capital.

The master trustee is State Street Bank; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are Myra Drucker, director-trust investments; John C. Winchester, manager-trust investments; and Connie R. Caperella, manager-portfolio analysis.

Iowa Public Employees Retirement System

	($ millions)
Total assets	3,820
Defined benefit	3,820
Employer contributions	120
Benefit payments	135
In-house assets:	
Short term	110
Passive investments:	
Indexed stocks	46
Alternative investments:	
Venture capital	9
LBOs	49
Real estate equity	151
Mortgage-backed securities	305
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	35%
Bonds	48%
Cash equivalents	3%
Real estate equity	4%
Mortgage-backed securities	8%
Venture capital/LBO	2%

DES MOINES, Iowa — Assets of the Iowa Public Employees Retirement System increased 14.3% to $3.82 billion in the year ended Sept. 30 from $3.341 billion. The fund lost $231 million because of the October stock market decline, but fund officials did not alter the asset mix because of the market havoc.

Equity managers: Batterymarch; Capital Guardian; IDS Growth Spectrum; Mellon; Provident Capital; Prudential Midco; Rosenberg; Value Investors; Wellington.

Fixed-income managers: Boston Co.; Criterion Investment; Loomis Sayles; Miller, Anderson & Sherrerd; J.P. Morgan.

Real estate managers: Aldrich, Eastman & Waltch; Copley; Heitman; JMB.

Venture capital managers: Allsop; Cable Howse; Gibbons, Green, Van Amerongen; Interven Partners; Invest America; Lawrence Venture Associates; Steinberg & Lyman; Welsh, Carson, Anderson & Stowe.

LBO managers: KKR; TCW.

The master custodian is Morgan Guaranty Trust; the investment consultant is Wilshire Associates.

Key personnel overseeing the investment management of the fund are Dennis L. Jacobs, Larry Thompson and Maurice Baringer.

ITT Corp.

	($ millions)
Total assets	3,015
Defined benefit	2,109
Profit-sharing	9
Thrift or savings	740
Other	157
Passive investments:	
Indexed stocks	51
Alternative investments:	
International equities	205
Oil and gas	9
LBOs	10
Real estate equity	na

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Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	68.8%
Bonds	16.5%
Cash equivalents	8.8%
Real estate equity	5.9%

NEW YORK — ITT Corp.'s total benefit assets and pension assets grew 15% to $2.858 billion as of Sept. 30 from $2.482 billion the previous year. Total assets after the market drop of October were $2.3 billion, a drop of 19.5%. There was little effect on the asset mix.

Equity managers: Alliance Capital; Alliance Capital International; Fred Alger; Barrow, Hanley, Mewhinney & Strauss; Capital Guardian; First Manhattan; GAMCO; G.T. Capital; Jennison; Lazard Freres; Manufacturers Hanover; Northern Trust; Verus Capital.

Fixed-income managers: Alliance; Bank of America International; Morgan Guaranty; Morgan International; State Street Research & Management.

Real estate managers: Coldwell Banker; Corporate Property Investors; Equitable Real Estate; Metropolitan Life; RREEF.

LBO managers: Blackstone; KKR.

Other managers: Butler Capital; Morgan Petroleum; Alex Brown.

The master trustee and custodian is The Northern Trust Co.

Key personnel overseeing the investment management of the fund are Edwin J. Ehrlich is director of the ITT pension fund trust. Eileen C. Leahy is manager of the pension fund trust.

K

Kansas Public Employees' Retirement System

	($ millions)
Total assets	3,311
Defined benefit	3,311
Employer contributions	105
Benefit payments	135
In-house assets:	
Fixed income	59
Short term	2
Alternative investments:	
International equities	112
International bonds	15
Real estate equity	149
Mortgage-backed securities	59
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	46%
Bonds	32%
Cash equivalents	11.5%
Real estate equity	5%
Mortgage-backed securities	2%
International stocks	3%
International bonds	0.5%

TOPEKA, Kan. — Assets of the Kansas Public Employees' Retirement Fund increased 19.4% for the year ended Sept. 30, to $3.311 billion from $2.773 billion. Fund officials said assets decreased by more than $300 million, or 9%, in the October market drop.

Equity managers: (Domestic) Capital Supervisors; Investment and Capital Management; Market Research and Management; Pilgrim Baxter Greig; Provident Investment Counsel; and Reimer & Koger.

(International): Alliance; Nomura.

Fixed-income managers: (Domestic) Robert C. Brown; Pacific Investment; and Peters, Gamm and West.

(International): Julius Baer.

Real estate manager: J.W. O'Connor.

Cash manager: Payden & Rygel.

Securities lending: Marine Midland Bank.

The master domestic custodian is Commerce Bank & Trust; the master international custodian is Bankers Trust. The investment consultant is Callan Associates.

Key personnel overseeing the investment management of the fund are Larry Jones, chairman of the board of trustees, and Marshall Crowther, executive secretary.

Kentucky Retirement Systems

	($ millions)
Total assets	2,556
Defined benefit	2,556
Employer contributions	108
Benefit payments	80
In-house assets:	
Equities	350
Fixed income	19
Short term	244
Passive investments:	
Indexed stocks	350
Alternative investments:	
Real estate equity	82
Mortgage-backed securities	305
Asset mix:	
Stocks	50%
Bonds	23%
Cash equivalents	10%
Real estate equity	3%
Mortgage-backed securities	14%

FRANKFORT, Ky. — The Kentucky Retirement Systems assets grew 21.3% in the year ended Sept. 30, to $2.556 billion from $2.108 billion.

As a result of the market crash, the fund's value slid 10% to $2.3 billion as of Oct. 31. The stock allocation

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dropped to 39% after the crash; the difference was made up mainly in the bond and cash segments, up four percentage points each.

Equity managers: Capital Supervisors.

Fixed-income managers: Capital Supervisors; and Munder Capital.

Real estate managers: Heitman.

The master custodian is Farmers Bank & Trust; the investment consultant is William M. Mercer-Meidinger-Hansen.

Bobby McKee, general manager, oversees investments for the fund.

Kentucky Teachers' Retirement System

	($ millions)
Total assets*	2,656
Defined benefit	2,656
Employer contributions	163
Benefit payments	157
*as of June 30, 1987	
In-house assets:	
Fixed income	224
Alternative investments:	
Real estate equity	37
Mortgages	113
Mortgage-backed securities	146
Asset mix:	
Stocks	19.1%
Bonds	48.5%
Cash equivalents	21.3%
Real estate equity	1.4%
Mortgages	4.2%
Mortgage-backed securities	5.5%

FRANKFORT, Ky. — The Kentucky Teachers' Retirement System benefit assets increased 14% as of June 30, to $2.656 billion from $2.323 billion as of Sept. 30, 1986.

The fund escaped heavy damage in October, reporting a decline of only 2.4% to $2.593 billion as of Oct. 31.

As of the same date, the asset allocation had shifted as follows: stocks, 23.3%; bonds, 47.2%; cash, 15.7%; mortgage-backed securities, 8.1%; real estate equity, 1.5%; and mortgages, 4.2%.

Equity managers: Todd Investment and INVESCO.

Fixed-income managers: Todd Investment and First Kentucky.

Real estate manager: F.I.A.

The master custodian is Farmers Bank & Capital Trust.

Key personnel overseeing the investment management of the fund are Pat N. Miller, executive secretary; Stuart A. Reagan, deputy executive secretary; and Paul L. Yancey, investment analyst.

K mart Corp.

	($ millions)
Total assets	1,620
Defined benefit	970
Thrift or savings	650
Employer contributions	35
Benefit payments	23
In-house assets:	
Fixed income	91
Passive investments:	
Indexed stocks	50
GICs	225
Alternative investments:	
Real estate equity	69
Mortgage-backed securities	40
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	52%
Bonds	9%
Cash equivalents	9%
Real estate equity	7%
GICs	23%

TROY, Mich. — K mart Corp.'s total employee benefit assets increased 15.8% in the 12 months ended Sept. 30, to $1.62 billion from $1.399 billion. Defined benefit assets alone increased 21.4%, to $970 million from $799 million.

The October market drop decreased total assets 13.6% to about $1.4 billion on Oct. 31. As of the same date, the asset mix was 44% stocks, 1% bonds, 10% cash equivalents, 8% real estate equity, 26% GICs and 1% stock options. The fund used options previously, but they were less than 1% of assets.

Equity managers: Alliance; Avatar; Capital Guardian; Dimensional Fund Advisors; and Midwest Investment.

Real estate managers: Equitec; JMB; and Security Capital.

Options manager: The Boston Co.

The master trustee is National Bank of Detroit.

The key person overseeing the investment management of the fund is John Steinbach, assistant treasurer and investment manager.

Kraft Inc.

	($ millions)
Total assets	1,710
Defined benefit	1,327
401(k)	350
ESOP	33
Employer contributions	23
Benefit payments	90
In-house assets:	
Equities	50
Short term	10
Passive investments:	
Indexed stocks	80
Alternative investments:	
International equities	125
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	49%
Bonds	19%
Cash equivalents	6%
Annuities	17%
International	9%

GLENVIEW, Ill. — Kraft Inc.'s total employee benefit assets declined 8.9% in the 12 months ended Sept. 30, to $1.710 billion from $1.877 billion, because of the transfer of assets when Dart & Kraft Inc. split into Kraft and Premark International Inc. Kraft's pension assets alone increased 2.4% in the year ended Sept. 30.

Kraft officials declined to state how the October market plunge affected assets.

Equity managers (Domestic): Atalanta/Sosnoff; Bankers Trust; BEA; Emerging Growth Partners; First Pacific; Neuberger & Berman; Ruane Cunniff; and Thorndike, Doran, Paine & Lewis.

(International): Mellon Pictet and Morgan Grenfell.

Fixed-income managers: Bankers Trust and Fischer, Francis, Trees & Watts.

The master trustees are Bankers Trust for pension assets and Northern Trust for 401(k) assets.

The key person overseeing the investment management of the fund is William H.S. Preece Jr., director-corporate finance.

L

Eli Lilly and Co.

	($ millions)
Total assets	1,875
Defined benefit	1,135
401(k)	740
Employer contributions	145
Benefit payments	45
Passive investments:	
Indexed stocks	185
Dedicated/immunized	83
Alternative investments:	
International equities	60
Venture capital	9
LBOs	2
Real estate equity	48
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	68%
Bonds	14%
Cash equivalents	14%
Real estate equity	4%

INDIANAPOLIS — Total employee benefit assets of Eli Lilly and Co. grew 31.6% to $1.875 billion as of Sept. 30, up from $1.425 billion the previous year. Defined benefit assets totaled $1.135 billion as of Sept. 30, up 29.7% from $875 million a year earlier.

As a result of the market turmoil during October, total employee benefit assets decreased 13.3% to $1.625 billion. Defined benefit assets dropped 13.2% to $985 million as of Nov. 1.

Equity managers: Ardsley; Capital Guardian; Mellon Capital; Nikko; Nomura; Reams; W.H. Reaves; and United Capital.

Fixed-income managers: Bank One, Indianapolis; and Northern Trust.

Real estate managers: JMB; RREEF; and First Wachovia.

The master trustee is Northern Trust.

Key personnel overseeing the investment management of the fund are B.J. "Jack" Miller, director-investments; Karen Hardwick, investment analyst-domestic; and Thomas Krake, investment analyst-international.

Lockheed Corp.

	($ millions)
Total assets*	8,025
Defined benefit	5,523
Defined contribution	2,502
Employer contributions	na
Benefit payments	na
**P&I Age* estimate	

CALABASAS, Calif. — *Pensions & Investment Age* estimates the total employee benefits of Lockheed Corp. rose 31.9% to $8.025 billion as of Sept. 30 from $6.085 billion the previous year. Defined benefit assets are estimated to have risen 28.1% during the same period, to $5.523 billion from $4.311 billion.

Managers (Defined benefit plan): Alliance; Anhalt/O'Connell; Bankers Trust; Batterymarch; Capital Guardian; Chase Investors; Citicorp Investment; Delaware Investment Advisers; First Interstate/Washington; Forstmann-Leff; Thomas L. Karsten; Lombard Odier International; Mellon Bank; J.P. Morgan; Payden & Rygel; RREEF; Royal Trust; SBC Portfolio; Security Pacific Investment; Smith Barney; TCW Asset; Wright Investment; and Western Asset.

(Defined contribution): Bankers Trust; Delaware Investment Advisers; Forstmann-Leff; Manufacturers Hanover Investment; Mellon Bank; Pacific Financial Research; Fayez Sarofim Trust; and TCW Asset.

The master trustee is Bankers Trust; the investment consultant is Bankers Trust.

George C. Weintz, investment counsel, oversees investment management of the fund.

Los Angeles City Employees' Retirement System

	($ millions)
Total assets	2,101
Defined benefit	2,101
Employer contributions	124
Benefit payments	129
In-house assets:	
Short term	179
Passive investments:	
Indexed stocks	255
Asset mix:	
Stocks	37%
Bonds	54%
Cash equivalents	9%

LOS ANGELES — The Los Angeles City Employees' Retirement System had $2.101 billion in benefit assets as of Sept. 30, an increase of 15.3% from $1.822 billion the previous year.

However, between Sept. 30 and Nov. 1, the assets declined by 8% to $1.933 billion as a result of the market turmoil during October.

Equity managers: Alliance; Bankers Trust; Investment Advisors; Loomis, Sayles; Provident Capital; and Security Pacific.

Fixed-income managers: Favia Hill and Loomis, Sayles.

The master trustee is Irving Trust; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Jerry Bardwell, manager-secretary; Oscar Peters, assistant manager; and Dan Gallagher, senior administrative assistant.

Los Angeles County Employees' Retirement Association

	($ millions)
Total assets*	8,262
Defined benefit	7,875
Defined contribution	323
Thrift or savings	13
401(k)	51
Employer contributions	338
Benefit payments	336
*as of June 30, 1987	
In-house assets:	
Fixed income	136
Short term	771
Other	170
Alternative investments:	
Venture capital	39
Private placements	143
Real estate equity	130
Mortgages	170
Mortgage-backed securities	632
Asset mix:	
Stocks	35.2%
Bonds	31.1%
Cash equivalents	21.4%
Real estate equity	1.6%
Mortgages	2.2%
Mortgage-backed securities	8%
Venture capital	0.5%

LOS ANGELES — The Los Angeles County Employees' Retirement Association had $8.262 billion in total employee benefit assets as of June 30, an increase of 13.3% from $7.293 billion the previous year. Defined benefit assets increased 11.6% to $7.875 billion as of June 30, up from $7.055 billion a year earlier.

No data was available on the impact of the market crash on the fund.

Equity managers: Capital Guardian; Loomis, Sayles; Massachusetts Financial; Security Pacific; and Stein Roe.

Fixed-income managers: Brown Brothers Harriman; Capital Guardian; CMB; Criterion; Massachusetts Financial; and J.P. Morgan.

Real estate managers: Heitman; Goldman, Sachs; Prudential; Security Capital; Equitable; TCW Realty; and Trammel Crow.

Venture capital managers: Copley Venture Partners; Media Communication Partners; and Warburg Pincus.

Cash manager: Discount Corp. of New York.

The master custodian is Security Pacific National Bank; the investment consultant is Callan Associates.

The key person overseeing the investment management of the fund is Sandra Tracey, county treasurer and tax collector.

Los Angeles Department of Water & Power Employees' Retirement Plan

	($ millions)
Total assets*	1,470
Defined benefit	1,470
Employer contributions	112
Benefit payments	100
*as of June 30, 1987	
In-house assets:	
Short term	96
Alternative investments:	
Private placements	29
Mortgage-backed securities	146
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	36%
Bonds	50%
Cash equivalents	5%
Mortgage-backed securities	9%

LOS ANGELES — The Los Angeles Department of Water and Power Employees' Retirement Plan had $1.476 billion in assets as of Sept. 30. A comparison to 1986's data would not be accurate because officials were unable to break out the death and disability fund assets for that year.

Equity managers: Bank of California; Boston Co.; and TCW.

Options managers: Boston Co. and TCW.

The master trustee is Bank of America; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Richard W. Goss, retirement plan manager; Kathleen Thornton, assistant retirement plan manager; and Clarence F. Brawn, investment officer.

Fire & Police Pension System — City of Los Angeles

	($ millions)
Total assets	2,744
Defined benefit	2,744
Employer contributions	271
Benefit payments	238
In-house assets:	
Short term	167
Passive investments:	
Indexed stocks	529
Alternative investments:	
Mortgage-backed securities	139
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	57.9%
Bonds	22.3%
Cash equivalents	14.7%
Mortgage-backed securities	5.1%

LOS ANGELES — The Fire & Police Pension System — City of Los Angeles had $2.744 billion in employee benefit assets as of Sept. 30, an increase of 24% from $2.205 billion in assets the previous year.

The assets declined 14.4% to $2.349 billion as of Nov. 1, a result of the market turmoil during October. The asset mix as of Nov. 1 was 53.7% stocks, 28.5% bonds, 12.4% cash, and 5.4% mortgage-backed securities.

Equity managers: Alliance; Loomis, Sayles; Security Pacific; and Wright Investors.

Fixed-income managers: Boston Co.; Magten; Security Pacific; and Solomon Asset.

Real estate managers: Equitable; JMB; Prudential; and Security Capital.

Options managers: Balch, Hardy & Scheinman; MCQ; and Oppenheimer Capital.

The master custodian is Bankers Trust; the investment consultant is Callan Associates.

Key personnel overseeing the investment management of the fund are Gary Mattingly, general manager; Allan Moore, assistant manager; and Dennis Sugino, investment officer.

Louisiana State Employees Retirement System

	($ millions)
Total assets	1,944
Defined benefit	1,944
Employer contributions*	122
Benefit payments	202
*as of June 30, 1987	
In-house assets:	
Fixed income	125
Short term	55
Alternative investments:	
Private placements	18
Mortgage-backed securities	174
Asset mix:	
Stocks	29%
Bonds	48%
Cash equivalents	13%
Mortgage-backed securities	9%
Other	1%

BATON ROUGE, La. — Total employee benefit assets of the Louisiana State Employees fund increased by 7.6% to $1.944 billion from $1.806 billion for the 18 months ended Sept. 30.

Balanced managers: Boston Co.; Duff & Phelps; Hibernia National Bank; and Security Pacific.

The master custodian is Irving Trust; the investment consultant is SEI.

The key person overseeing the investment management of the fund is Vernon Strickland, chief investment officer.

Teachers' Retirement System of Louisiana

	($ millions)
Total assets	2,741
Defined benefit	2,741
Employer contributions	185
Benefit payments	300
In-house assets:	
Short term	300
Alternative investments:	
International equities	50
Mortgage-backed securities	300
Asset mix:	
Stocks	24.8%
Bonds	53.8%
Cash equivalents	11.4%
Mortgage-backed securities	10%

BATON ROUGE, La. — The Teachers' Retirement System of Louisiana recorded a 5.1% increase for the year ended Sept. 30, to $2.741 billion from $2.609 billion. That gain was wiped out in October's market decline; the fund reported total assets of $2.591 billion as of Oct. 31. Fund officials said the asset mix did not change because of the drop.

Equity managers: Boston Co.; Citicorp; Eagle Asset; and INVESCO.

Fixed-income managers: Centerre Trust; Criterion; Hibernia National Bank; Massachusetts Financial; and Scudder, Stevens & Clark.

The custodian is City National Bank of Baton Rouge; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Jennifer Netterville, investment officer, and Carleton C. Page, director and secretary-treasurer.

Public funds: Nov. 28.

M

Maine State Retirement System

	($ millions)
Total assets	1,390
Defined benefit	1,390
Employer contributions	148
Benefit payments	130
Alternative investments:	
Oil and gas	5
Private placements	28
Asset mix:	
Stocks	57%
Bonds	35%
Cash equivalents	8%

AUGUSTA, Maine — Total assets of the Maine State Retirement System increased 26.4% for the 12 months ended Sept. 30 to $1.39 billion from $1.1 billion. Because of market volatility, assets slipped 11.8% during October, to $1.226 billion as of Oct. 31.

The asset mix had changed as of Oct. 31 to 43% stocks; 39% fixed income; and 18% cash equivalents.

Equity managers: Alliance; Casco Northern; Dillon, Read; Evans & Moxon; FLA Asset; Gouws Capital; Maine National Bank; and Putnam Advisors.

Fixed-income managers: Alliance; Massachusetts Financial; Morgan Guaranty; and Putnam Advisory.

Real estate manager: Property Capital.

Other: Morgan Guaranty.

The master custodian is Boston Safe Deposit & Trust; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Claude Perrier, executive director, and William B. Ross, investment account coordinator.

Martin Marietta Corp.

	($ millions)
Total assets	2,809
Defined benefit	2,024
Profit-sharing	785
Employer contributions	107
Benefit payments	58
In-house assets:	
Equities	161
Fixed income	148
Passive investments:	
GICs	109
Asset mix:	
Stocks	37%
Bonds	13%
Cash equivalents	45%
GICs	5%

BETHESDA, Md. — Martin Marietta Corp.'s total employee benefit assets increased 32.3%, to $2.809 billion on Sept. 30, from $2.123 billion the previous year. Defined benefit assets increased 29.3% during the same period, to $2.024 billion from $1.565 billion.

Equity managers: Breau Capital; Capital Guardian; Pioneering; State Street Research; Robert E. Torray; Van Eck; and Value Investors.

Fixed-income manager: T. Rowe Price.

The master trustee is Bankers Trust; the investment consultant is Janney, Montgomery, Scott.

Key personnel involved in overseeing investment management of the fund are Wayne H. Shaner, assistant treasurer; Shawn M. Hendon, manager-pension investments; and Wendy J. Thomson, senior financial analyst.

Maryland State Retirement and Pension Systems

	($ millions)
Total assets	8,274
Defined benefit	8,274
Employer contributions	554
Benefit payments	480
In-house assets:	
Equities	1,968
Fixed income	1,155
Short term	376
Passive investments:	
Indexed stocks	1,900
Alternative investments:	
Real estate equity	100
Asset mix:	
Stocks	63.4%
Bonds	35.4%
Real estate equity	1.2%

BALTIMORE — Benefit assets of the Maryland State Retirement and Pension Systems totaled $8.274 billion as of Sept. 30, an increase of 22.1% from the $6.778 billion reported as of June 30, 1986.

After Sept. 30, but before the Oct. 19 market crash, the fund sold $2.3 billion in equities and established a $4 billion dedicated bond portfolio. This resulted in an asset mix of 35% stocks, 50% dedicated bonds, 13% actively run bonds and 2% in real estate. As of Nov. 30, the asset mix had shifted further to 26.5% equities, 52.2% dedicated bonds, 20% active fixed income and 1.3% equity real estate.

Equity managers: Alliance; Atlanta; Capital Guardian; Dimensional Fund; Eaton Vance; Hagler, Mastrovita & Hewitt; Investment Advisors; Investment Counselors of Maryland; MacKay-Shields; Scudder, Stevens & Clark; State Street Research; and Wellington Trust.

Fixed-income managers: Investment Counsellors of Maryland; Mercantile Safe; Miller Anderson Sherrerd; Morgan Stanley Aaset; PIMCO; and Standish Ayer and Wood.

Real estate managers: CIGNA; Copely; J.P. Morgan; and Security Capital.

The master custodians are Depository Trust Co. and First National Bank of Maryland.

Key personnel overseeing the investment management of the fund are Howard J. France, executive director for investments; Arthur M. Lynch Jr., director of actively managed investments; and Lawrence J. Bach, director of passively managed investment.

Pension Reserves Investment Management Board (of Massachusetts)

	($ millions)
Total assets	2,202
Employer contributions	113
Benefit payments	25
In-house assets:	
Short term	15
Passive investments:	
Indexed stocks	438
Indexed bonds	221
Alternative investments:	
International equities	274
Venture capital	13
Oil and gas	3
LBOs	34
Private placements	5
Real estate equity	111
Asset mix:	
Stocks	55%
Bonds	31.1%
Cash equivalents	6.3%
Real estate equity	5.4%
Other	2.2%

BOSTON — The Pension Reserves Investment Management Board reported assets of $2.202 billion as of Sept. 30, an increase of 33.8% from the $1.646 billion reported a year earlier.

Assets dropped 10.6% after the October market crash to $1.968 billion as of Oct. 31.

Equity managers: Alliance; Bear Stearns; Boston Co. Institutional; Lazard Freres; Trinity; and United States Trust, Boston.

International managers: Baring International Investment; N.M. Rothschild International; Schroder International; Scudder, Stevens & Clark; State Street Bank; and Warburg International.

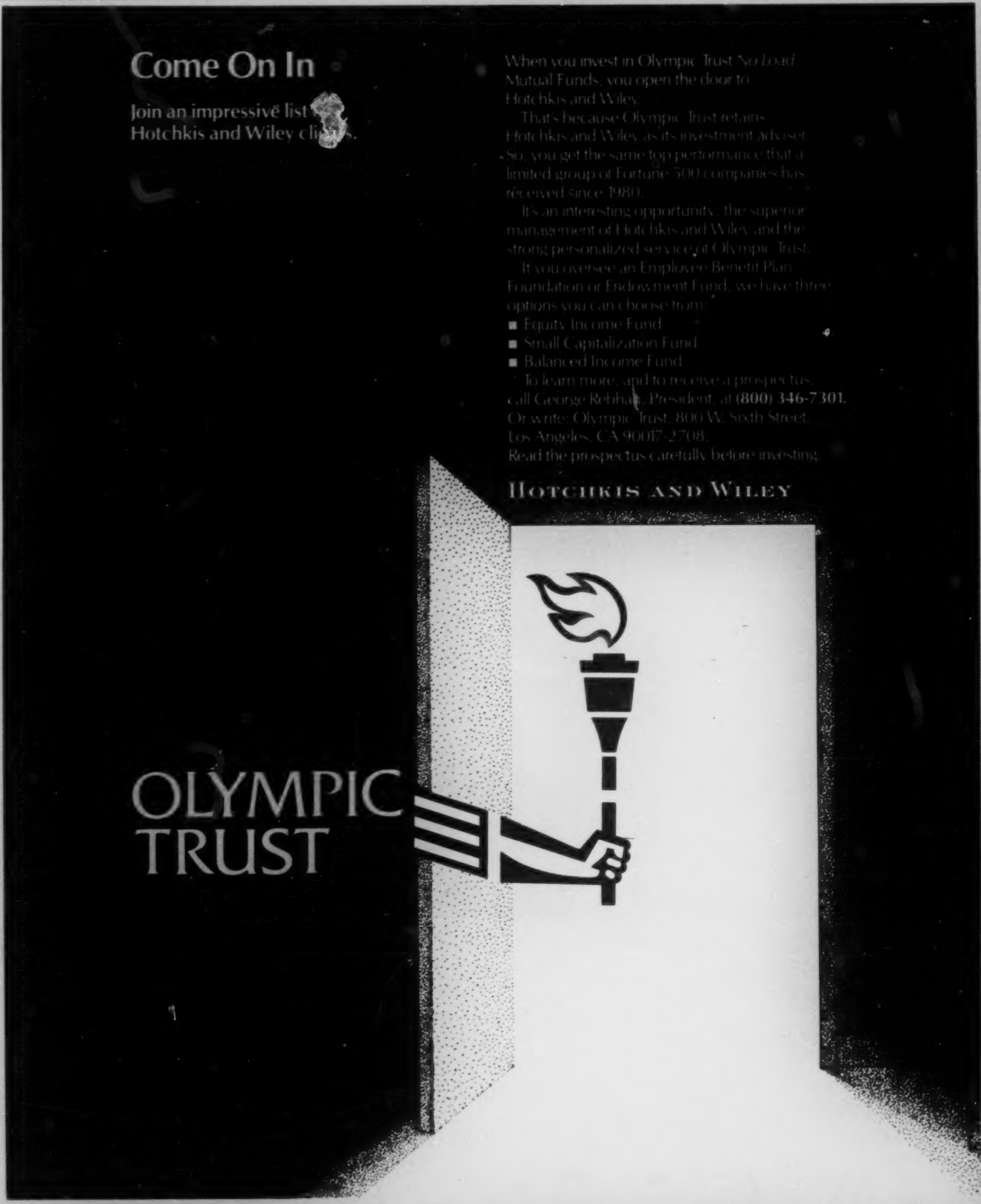
Fixed-income managers: Baring America; Lehman Management; One Federal Asset; Putnam Advisory; and M.D. Sass.

Real estate managers: Aldrich, Eastman & Waltch; Bank of Boston; Copley; John Hancock; Heitman; JMB; Lomas & Nettleton; Massachusetts Mutual; and TCW.

Venture capital managers: Davis Venture; Forstmann Little; John Hancock Venture; KKR; Smith Offshore; Southern California Ventures; Venture Capital Fund of New England; Vista III; Weintraub Entertainment.

The master custodian is State Street Bank; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Paul F. Quirk, executive director, and Philip D. Kett, chief investment officer.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Massachusetts State Board of Retirement

	($ millions)
Total assets	3,500
Defined benefit	3,500
Employer contributions	550
Benefit payments	350
In-house assets:	
Fixed income	1,700
Passive investments:	
Indexed stocks	200
Indexed bonds	50
Alternative investments:	
International bonds	50
Venture capital	27
Real estate equity	30
Asset mix:	
Stocks	36%
Bonds	55%
Cash equivalents	7%
Real estate equity	1%
Venture capital	1%

BOSTON — Total assets of the Massachusetts State Board of Retirement grew 0.7% for the 12 months ended Sept. 30, to $3.5 billion from $3.475 billion. Officials did not have information available on the fund's performance during October.

Equity managers: Eaton, Vance; Gardner & Preston Moss; Hagler, Mastrovita & Hewitt; Independence Investment; INVESCO; Keystone; Manufacturers Life; Standish, Ayer & Wood; and State Street Bank.

Fixed-income managers: Baring America; Fiduciary Trust International; Gardner & Preston Moss; W.R. Lazard; Loomis, Sayles; Miller, Anderson & Sherrerd; Pacific Investment; Standish, Ayer & Wood; and State Street Research.

The master custodian is State Street Bank; the investment consultant is Massachusetts Fiduciary.

Key personnel overseeing the investment management of the fund are Allen West, chief investment officer, and Maria Pino, senior investment officer.

McDonnell Douglas Corp.

	($ millions)
Total assets	6,800
Defined benefit	5,500
Defined contribution	1,300
Employer contributions	na
Benefit payments	na

ST. LOUIS — McDonnell Douglas Corp.'s total employee benefit assets rose 18.6%, to $6.8 billion as of Sept. 30, from $5.735 billion as of June 30, 1986. During the same period, defined benefit assets grew 24.8%, to $5.5 billion from $4.407 billion.

Managers: Aetna; Bankers Trust; Centerre Trust; Dimensional; LaSalle; RREEF; and TCW Realty.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are D. Hammerstein, director-retirement funds management; S.L. Kwiatek, manager-retirement funds management; and A.J. Mangoff, investment analyst.

Merck & Co. Inc.

	($ millions)
Total assets	1,377
Defined benefit assets	952
Profit-sharing	89
Thrift or savings	336
Employer contributions	na
Benefit payments	59
Alternative investments:	
International equities	70
International bonds	21
Venture capital	4
Oil and gas	10
Real estate equity	59
Mortgage-backed securities	23
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67%
Bonds	19%
Cash equivalents	5%
Real estate equity	6%
Other	3%

RAHWAY, N.J. — As of Sept. 30, Merck & Co. Inc. had total employee benefit assets of $1.377 billion, an increase of 46.6% from $939 million the previous year. Defined benefit assets totaled $952 million as of Sept. 30, an increase of 21.3% from $785 million a year earlier.

Defined benefits declined 16.8% during October, totaling $792 million as of Nov. 1. Asset totals for the company's other benefit plans were not available. A company executive said no changes in the pension fund's asset mix were anticipated as a result of the market's drop.

Equity managers: Capital Guardian; Concord; J.P. Morgan; Siebel; and State Street Research.

Fixed-income manager: J.P. Morgan.

Real estate manager: J.P. Morgan and Prudential Realty.

Venture capital manager: Alliance.

Oil and gas manager: J.P. Morgan.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are Lee M. Hale, assistant treasurer; Charles Freund, director of pensions and benefits investments; and Judy C. Lewent, vice president and treasurer.

Metropolitan Life Insurance Co.

	($ millions)
Total assets	3,113
Defined benefit	2,318
Thrift or savings/401(k)	730
Other	65
Employer contributions	22
Benefit payments	125
In-house assets:	
Equity	579
Fixed income	1,484
Other	255
Alternative investments:	
Real estate equity	255
Asset mix:	
Stocks	25%
Bonds	48%
Real estate equity	11%

NEW YORK — Metropolitan Life Insurance Co.'s own employee benefit assets grew 10.1% to $3.113 billion from $2.828 billion during the year ended Sept. 30; defined benefit assets increased 7.8% during the same period, to $2.318 billion from $2.15 billion. All assets are managed internally.

Most of the gains were lost during the month of October, however, when total assets slid 6.8% to $2.9 billion as of Oct. 31.

The portfolio mix changed as a result of the market crash: stocks were reduced to 20%; fixed income was increased to 68%; and real estate equity was raised slightly to 12%.

The company's corporate management office oversees investment management of the assets; J.L. Rubsam, administrator, has day-to-day responsibility.

Michigan State Employees' Retirement Systems

	($ millions)
Total assets	16,680
Defined benefit	16,073
Thrift or savings	584
401(k)	23
Employer contributions	827
Benefit payments	932
In-house assets:	
Equities	7,876
Fixed income	5,626
Short term	2,411
Other	160
Alternative investments:	
Venture capital	196
LBOs	110
Private placements	1,000
Real estate equity	87
Mortgages	1,003
Mortgage-backed securities	1,100
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	48.4%
Bonds	21.2%
Cash equivalents	15%
Real estate equity	0.5%
Mortgages	6.2%
Mortgage-backed securities	6.8%
Venture capital/LBOs	1.9%

LANSING, Mich. — Total benefit assets of the Michigan State Employees' Retirement Systems grew 22.8% to $16.68 billion as of Sept. 30, 1987, from $13.58 billion as of Aug. 31, 1986. Defined benefit assets alone rose 18.4%, to $16.073 billion from $13.58 billion. All assets are managed internally.

Because of the market volatility, total assets dropped 10.6%, to roughly $14.9 billion, and pension assets dropped 11%, to roughly $14.3 billion, as of Oct. 31.

Michigan had been selling stocks in the days before the Oct. 19 plunge, bringing its equity allocation down to 36.1% by the end of the month. Other asset classes whose allocations changed significantly by Oct. 31 were cash, up to 22%, and bonds, up to 24.2%.

The master custodian is the state treasurer, with settlement services provided by National Bank of Detroit.

Key personnel overseeing the investment management of the fund are Robert A. Bowman, state treasurer; W.A. Amerman, director of investments; and Barry Stevens and Gordon Linsday, assistant directors.

City of Milwaukee Employes' Retirement System

	($ millions)
Total assets	1,355
Defined benefit	1,355
Employer contributions	40
Benefit payments	50
Passive investments:	
Dedicated/immunized	163
Alternative investments:	
Real estate equity	15
Mortgage-backed securities	125
Asset mix:	
Stocks	44%
Bonds	37%
Cash equivalents	7%
Real estate equity	2%
Mortgage-backed securities	9%
Other	1%

MILWAUKEE — Benefit assets of the City of Milwaukee Employes' Retirement System rose 14.2% during the 12-month period ended Sept. 30, to $1.355 billion from $1.187 billion.

Plan assets had dropped 9.3% by the end of October, to $1.229 billion. Because of the crash, stocks declined as a percentage of total assets, while bonds rose. The asset mix changed to 38% stocks, 41% bonds, 8% cash, 2% real estate equity, 10% mortgage-backed securities and 1% other.

Equity managers: Alliance; Delaware; INVESCO; and the Wisconsin State Investment Board.

Fixed-income managers: Criterion; First Wisconsin Trust; and Loomis, Sayles.

Real estate managers: The fund invests with managers Aetna and JMB through Institutional Property Consultants.

SBA loans manager: Marine Trust.

The master trustee is First Wisconsin Trust; the investment consultants are SEI and Ennis, Knupp.

Key personnel overseeing the investment management of the fund are Robert G. Nehls, secretary and executive director; and Duamel Vellon, assistant secretary and executive director.

Minnesota Mining & Manufacturing Co.

	($ millions)
Total assets	2,843
Defined benefit	2,387
Defined contribution	456
Employer contributions	0
Benefit payments	65
Passive investments:	
Indexed stocks	278
Alternative investments:	
International equities	172
Venture capital	13
LBOs	41
Private placements	200
Real estate equity	108
Mortgages	20
Mortgage-backed securities	125
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67%
Bonds	16%
Cash equivalents	4%
Real estate equity	5%
Mortgages	1%
Mortgage-backed securities	5%
Other	2%

ST. PAUL, Minn. — Minnesota Mining & Manufacturing Co.'s total employee benefit assets rose 28% to $2.843 billion as of Sept. 30, up from $2.221 billion the previous year. Defined benefit assets climbed 24.1% to $2.387 billion as of Sept. 30, up from $1.924 billion a year earlier.

As a result of the market's turmoil during October, fund officials estimate the defined benefit assets fell about 14% to approximately $2.05 billion. Fund officials decided to reduce the fund's domestic and international equity exposure to 50% of total assets, from 67%, moving $250 million to $300 million into short-term, fixed-income instruments between Nov. 5 and Dec. 1.

Equity managers: Alliance; Brignoli, Curley & Roberts; Franklin Portfolio; Grantham, Mayo, Van Otterloo; IDS Advisory; Liberty Square; Management Asset; Mellon Capital; T. Rowe Price; Schroder; Trinity; TSA; and ValueQuest.

Fixed-income managers: Hoisington; Minnesota Mutual; Pacific Investment; and Sun Life.

Real estate managers: Citibank; Equitable; JMB; RCB Realty; RREEF; and TCW.

Other managers: HLM Partners and Forstmann Little.

The master trustees are Boston Safe Deposit and Trust, and First Trust Co., St. Paul. The investment consultant is Lewis Bailey Associates.

Key personnel overseeing the investment management of the fund are

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Janet L. Yeomans, director-investments, and Rajbir S. Kang, senior pension fund analyst.

Minnesota State Board of Investment

	($ millions)
Total assets*	9,706
Defined benefit	9,305
Defined contribution	401
Employer contributions	na
Benefit payments	na
*as of June 30, 1987	
In-house assets:	
Equities	766
Fixed income	3,036
Short term	360
Passive investments:	
Indexed stocks	2,174
Dedicated/immunized	2,560
GICs	5
Alternative investments:	
Venture capital	86
Oil and gas	63
Real estate equity	396
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	43.8%
Bonds	42.6%
Cash equivalents	7.8%
Real estate equity	4.2%
Other	1.6%

ST. PAUL, Minn. — The Minnesota State Board of Investment's total employee benefit assets increased 12.1% to $9.706 billion from $8.658 billion for the year ended June 30. Defined benefit assets rose 13.2% during the same period, to $9.305 billion from $8.222 billion.

Equity managers: Fred Alger; Alliance; Beutel Goodman; BMI; Forstmann Leff; Hellman Jordan; IDS Advisory; Investment Advisers; Lieber; Peregrine; Waddell and Reed; and Wilshire.

Fixed-income managers: Investment Advisers; Lehman Management; Miller, Anderson & Sherrerd; Morgan Stanley; Peregrine; and Western Asset.

Real estate managers: Aetna; Equitable; Heitman; Prudential; RREEF; State Street Bank; and TCW.

Venture capital/LBO managers: Allied Venture; DSV; IAI; Inman and Bowman; KKR; Matrix Partners; Norwest Venture; Smith Barney Venture; Summit Ventures.

Oil and gas managers: Apache and First Reserve.

Cash manager: State Street Bank.

The master custodian is State Street Bank; the investment consultant is Richards & Tierney.

Key personnel overseeing the investment management of the fund are Howard Bicker, executive director; Jeff Bailey, assistant executive director; and Beth Lehman, assistant to executive director.

Public Employees' Retirement System of Mississippi

	($ millions)
Total assets	3,218
Defined benefit	3,218
Employer contributions	168
Benefit payments	159
Passive investments:	
Indexed stocks	515
Indexed bonds	980
Alternative investments:	
Mortgage-backed securities	400
Asset mix:	
Stocks	25%
Bonds	58%
Cash equivalents	5%
Mortgage-backed securities	12%

JACKSON, Miss. — Assets of The Public Employees' Retirement System of Mississippi rose 18.5% to $3.218 billion from $2.716 billion for the year ended Sept. 30. The fund lost about 4.5% of its total assets because of the Oct. 19 stock market drop, but no changes in asset mix were made.

Equity managers: Bankers Trust; Boston Co.; INVESCO; Fayez Sarofim; and Sun Bank.

Fixed-income managers: Criterion; Dreyfus; Lehman; PIMCO; and Wells Fargo Investment Advisors.

The master custodian is Trustmark National Bank; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are

Eddie B. Vandiver, deputy director-investments; and Ronald D. Logan, investment manager.

Public School Retirement System of Missouri

	($ millions)
Total assets*	3,196
Defined benefit	3,196
Employer contributions	251
Benefit payments	na
*From Money Market Directory	
Alternative investments:	
Mortgage-backed securities	767
Asset mix:	
Stocks	10%
Bonds	59%
Cash equivalents	7%
Mortgage-backed securities	24%

JEFFERSON CITY, Mo. — Assets of the Public School Retirement System of Missouri apparently decreased 2.3% in the 12 months ended June 30, to $3.196 billion from the $3.274 billion the fund reported a year earlier.

The fund would not supply data or an explanation of the apparent drop. Its investment managers, as reported in Money Market Directory, are as follows.

Managers: Boatmen's National Bank; Centerre Trust; and United Missouri Investment Counsel.

The master custodian is Boatmen's National Bank; the investment consultant is DeMarche Associates.

The key person overseeing the investment management of the fund is David W. Mustoe, executive secretary.

Mobil Oil Corp.

	($ millions)
Total assets	4,336
Defined benefit	2,260
Defined contribution	1,900
PAYSOP	176
Employer contributions	na
Benefit payments	na
Passive investments:	
Indexed stocks	157
Dedicated/immunized	361
GICs	78
Alternative investments:	
International equities	23
Mortgage-backed securities	177
Asset mix:	
Stocks	48%
Bonds	24%
Cash equivalents	9%
Mortgage-backed securities	8%
GICs	3%
Insurance accounts	8%

NEW YORK — Mobil Oil Corp.'s total employee benefit assets grew 10.3% in the 12 months ended Sept. 30, to $4.336 billion from $3.93 billion. Defined benefit assets grew 3.7%, to $2.26 billion from $2.18 billion during the same period.

Equity managers: Alliance; Bankers Trust; Capital Guardian; Chase Investors; Citicorp Investment; Jennison; Miller, Anderson & Sherrerd; Fayez Sarofim; State Street Research; and Wells Fargo Investment.

Fixed-income managers: State Street Research and U.S. Trust of New York.

Insurance managers: Aetna and Metropolitan Life.

The master trustee is U.S. Trust of New York for pension assets, and Bankers Trust for the defined contribution and PAYSOP assets.

Key personnel overseeing investment management are Robert B. Hahnen, manager of corporate benefits-finance; and Andrea R. Hahn, assistant manager of corporate benefits-finance.

Monsanto Co.

	($ millions)
Total assets	4,300
Defined benefit	3,500
Thrift or savings/401(k)	800
Employer contributions	30
Benefit payments	175
In-house assets:	
Fixed income	70
Alternative investments:	
International equities	300
Real estate equity	200
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	65%
Bonds	20%
Cash equivalents	8%
Real estate equity	7%

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ST. LOUIS — Monsanto Co.'s total total benefit assets increased 31.1% in the year ended Sept. 30, to $4.3 billion from $3.28 billion a year earlier. In the same period, the defined benefit assets increased 39%, to $3.5 billion from $2.52 billion. W.N. Searcy, manager-pension asset management, would not release figures as of Oct. 31.

Managers: Analytic Investment; Brown Capital; Capital Guardian; Centerre Trust; Citicorp; Martin Currie; Delaware Investment; Equitable Life; Fischer, Francis, Trees & Watts; Hagler, Mastrovita and Hewitt; Hotchkis and Wiley; Jennison; Kurtz Capital; Lincoln Capital; Lord, Abbett; J.P. Morgan; T. Rowe Price; Rowe Price-Fleming; RCM; Security Pacific Investment; Standish, Ayer & Wood; State Street Research; STW; Trinity Investment Management; and United States Trust, New York.

Real estate managers: Landauer; LaSalle Advisors; RREEF; and TCW Realty.

The master trustee is Northern Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are A.E. Wolfarth, assistant treasurer; W.N. Searcy, manager-pension asset management; and W.H. Crabbin, pension analyst.

Motorola Inc.

	($ millions)
Total assets*	1,358
Defined benefit	470
Defined contribution	888
Employer contributions	na
Benefit payments	na

*From Money Market Directory

SCHAUMBURG, Ill. — As of March 31, Motorola Inc.'s total employee benefit assets increased 2.5% to $1.358 billion from $1.325 billion a year earlier. Defined benefit assets increased 17.5% during the same period, to $470 million from $400 million.

According to the Money Market Directory, the managers are as follows.

Equity managers: (Domestic) Capital Guardian; Chase Manhattan; Jennison; Lehman; Lincoln; and State Street Research.

(International) J.P. Morgan.

Fixed-income managers: Brown Brothers Harriman; Scudder, Stevens & Clark; and Stein Roe & Farnham.

Other managers: Delaware Investment and Morgan Grenfell.

The master trustee is Harris Trust & Savings Bank.

Key personnel overseeing the investment management of the fund are Garth Milne, vice president and treasurer, and William H. Clarkin Jr., assistant treasurer.

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National Electrical Contractors Association

	($ millions)
Total assets	2,770
Defined benefit	2,770
Employer contributions	167
Benefit payments	147
Passive investments:	
Indexed stocks	534
Indexed bonds	887
Alternative investments:	
Real estate equity	229
Mortgages	100
Asset mix:	
Stocks	28.5%
Bonds	47.5%
Cash equivalents	15.8%
Real estate equity	8.2%

ARLINGTON, Va. — The National Electrical Contractors Association Pension Benefit Trust Fund had $2.77 billion in total employee benefit assets as of Sept. 30.

Equity manager: ASB Capital.

Fixed-income manager: ASB Capital.

Real estate manager: ASB Capital.

The master trustee is Boston Safe Deposit; the investment consultant is ASB Capital.

Key personnel overseeing the investment management of the fund are John M. Grau and Jack F. Moore, trustees, and Anthony J. Salamone, executive secretary-treasurer.

National Rural Electric Cooperative Association

	($ millions)
Total assets	2,048
Defined benefit	1,746
Thrift or savings/401(k)	302
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	267
Fixed income	238
Short term	122
Passive investments:	
Indexed stocks	212
Indexed bonds	50
Alternative investments:	
International equities	163
Venture capital	2
Mortgage-backed securities	5
Asset mix:	
Stocks	64%
Bonds	20%
Cash equivalents	15%
Mortgage-backed securities	1%

WASHINGTON — Total benefit and pension assets for National Rural Electric Cooperative Association increased 32.1% to $2.048 billion from $1.55 billion for the year ended Sept. 30. Total assets as of Oct. 31 fell to $1.782 billion — a decline of 13%. As a result of the market drop, the fund continued to move to fixed income. The asset mix Oct. 31 was 53% stock; 31% bonds; 15% cash equivalents and 1% mortgage-backed securities.

Equity managers: Bankers Trust; Barrow Hanley; C-S Capital; Capital Guardian; Chesapeake Capital; Grantham Mayo; J.P. Morgan.

Fixed-income manager: Lincoln Income Group.

Venture capital manager: Saugatuck.

The master trustee and custodian is State Street.

Key personnel overseeing the investment management of the fund are Peter R. Morris, manager-investments; Stuart E. Teach, senior equity portfolio manager; Douglas G. Kern, senior fixed-income portfolio manager.

Master trust: Aug. 22.

Navistar International Corp.

	($ millions)
Total assets	1,606
Defined benefit	1,600
401(k)	6
Employer contributions	0
Benefit payments	228
Passive investments:	
Dedicated/immunized	1,584
Hedging devices:	
Fixed-income futures	Y
Asset mix:	
Stocks	1%
Bonds	99%

CHICAGO — Navistar International Corp.'s employee benefit assets fell 3% in the year ended Sept. 30, 1987, to $1.606 billion from $1.655 billion. Defined benefit assets fell by the same

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amount, to $1.6 billion from $1.65 billion a year earlier.

The fund, which has been almost totally invested in a dedicated bond portfolio for several years, was virtually unaffected by the October stock market crash.

Equity manager: M.B. O'Higgins.

Fixed-income managers: Jennison; J.P. Morgan.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are Terry Endsley, manager-pension investments, and Robert C. Lannert, vice president and treasurer.

Public funds: Nov. 28.

Public Employees Retirement System of Nevada

	($ millions)
Total assets	2,515
Defined benefit	2,515
Employer contributions	168
Benefit payments	85
In-house assets:	
Fixed income	51
Other	4
Passive investments:	
Indexed stocks	391
Alternative investments:	
International equities	50
Venture capital	5
Real estate equity	135
Mortgages	134
Mortgage-backed securities	188
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	41.8%
Bonds	41%
Real estate equity	5%
Mortgages	5%
Mortgage-backed securities	7%
Venture capital	0.2%

CARSON CITY, Nevada — The Public Employees Retirement System of Nevada had a 22.8% increase in assets for the year ended Sept. 30, to $2.515 billion from $2.048 billion. Because of the market turmoil in October, the system's assets declined 7.3% to $2.33 billion as of Oct. 31.

Equity managers: Alliance; Axe Core; Criterion; Dimensional Fund; INVESCO; Loomis Sayles; and Wells Fargo.

Fixed-income managers: Criterion; Patterson Capital; Putnam Advisory; and State Street Research.

Real estate managers: Heitman; JMB; Karsten; J.P. Morgan; PMRealty; Prudential; and TCW.

Venture capital managers: Bay Partners; Criterion Venture Fund; and Columbine.

Options mangers: Bankers Trust and Balch Hardy.

The master custodian is Nevada National Bank; the investment consultants are Mercer-Meidinger-Hansen and Pension Realty Advisors.

Key personnel overseeing the investment management of the fund are Wilbur W. Keating, executive officer, and Laura B. Wallace, investment officer.

New Jersey Division of Investment

	($ millions)
Total assets*	19,785
Defined benefit	19,570
Thrift or savings/401(k)	215
Employer contributions	750
Benefit payments	950
*as of June 30, 1987	
In-house assets:	
Equities	10,036
Fixed income	6,893
Short term	479
Other	2,162
Alternative investments:	
Private placements	50
Mortgage-backed securities	2,162
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	51.3%
Bonds	35.2%
Cash equivalents	2.5%
Mortgage-backed securities	11%

TRENTON, N.J. — The New Jersey Division of Investment's employee benefit assets grew 17.1% during the 12 months ended June 30, to $19.785 billion from $16.901 billion. Defined benefit assets alone grew 17.4% during the same period. All the assets are managed internally.

A group of 12 banks serves as custodian.

Key personnel overseeing the investment management of the fund are Roland M. Machold, director; William P. Mooney, deputy director; and Stephen Kornrumpf, assistant director.

New Mexico Educational Retirement Board

	($ millions)
Total assets*	1,482
Defined benefit	1,482
Employer contributions	74
Benefit payments	76
*book value as of Oct. 31, 1987	
In-house assets:	
Equities	30
Fixed income	1,245
Short term	59
Other	148
Alternative investments:	
Mortgage-backed securities	148
Asset mix:	
Stocks	2%
Bonds	84%
Cash equivalents	4%
Mortgage-backed securities	10%

SANTA FE, N.M. — The book value of total pension assets of the New Mexico Educational Retirement Board increased 10.5%, in the year ended Oct. 31, to $1.482 billion from $1.341 billion. All assets are managed internally.

The master custodian is Irving Trust; the investment consultant is Von Nelson, Scarborough & McConnell.

Key personnel overseeing the investment management of the fund are Robert Short and Patricia Griego, investment officers.

New Mexico Public Employees Retirement Association

	($ millions)
Total assets	1,471
Defined benefit	1,471
Employer contributions	76
Benefit payments	50
In-house assets:	
Other	38
Alternative investments:	
Private placements	23
Real estate equity	38
Mortgages	4
Mortgage-backed securities	116
Asset mix:	
Stocks	39%
Bonds	40%
Cash equivalents	11%
Real estate equity	2%
Mortgages	0.2%
Mortgage-backed securities	7.8%

SANTA FE, N.M. — Pension assets at the New Mexico Public Employees Retirement Association grew 18.3% in the 12 months ended Sept. 30, to $1.471 billion from $1.243 billion.

Because of market volatility, assets declined 7.4% during October, to $1.362 billion as of Oct. 31.

During October, the fund pulled back its stock position, shifting assets into bonds and cash. By Oct. 31, the asset mix was 26% stocks, 47% bonds, 17% cash, with basically the same allocations in other asset classes.

Equity managers: Criterion and INVESCO.

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Fixed-income managers: Criterion; Fiduciary Trust International; Loomis, Sayles; and Wentworth, Hauser & Violich.

The custodian is Irving Trust; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Judith K. Alderson, director; and Lorraine Ward, deputy.

New York City Retirement Systems

	($ millions)
Total assets	33,633
Defined benefit	32,104
Defined contribution	1,529
Employer contributions	1,830
Benefit payments	2,300
Portfolio insurance	221
In-house assets:	
Fixed income	590
Short term	799
Passive investments:	
Indexed stocks	9,731
Indexed bonds	18,306
GICs	1,014
Alternative investments:	
International equities	51
Mortgages	72
Mortgage-backed securities	4,900
Asset mix:	
Stocks	35.5%
Bonds	43.5%
Cash equivalents	2.5%
Mortgage-backed securities	15.3%
GICs	3.2%

NEW YORK — Total employee benefit assets of the New York City Retirement Systems increased 9% in the year ended Sept. 30, to $33.633 billion from $30.839 billion. Defined benefit assets rose 7.9%, to $32.104 billion from $29.767 billion during the same period.

After the October market crash, assets totaled $31.475 billion, a drop of 6.4%.

Five retirement plans comprise the city retirement systems: the $13.803 billion New York City Employees' Retirement System; the $1.838 billion New York City Fire Department Pension Fund; the $5.042 billion New York City Police Department Pensions Fund; the $7.327 billion New York City Teachers' Retirement System; and the $504 million (as of Sept. 30) Board of Education Retirement System. The investments of the employees', police and fire funds are handled by the city comptroller's office. The comptroller also handles the fixed-income assets of the teachers' and board of education funds.

The teachers' system's variable annuity programs are composed of a tax-deferred annuity, Variable Fund A, which is invested in equities, and Variable Fund B, which is invested in guaranteed investment contracts. The Board of Education fund invests in Fund A.

As of Sept. 30, Fund A reported $4.179 billion in assets (including $72 million from the board of education fund) and Fund B, $1.014 billion. Reflecting its equity orientation, Fund A dropped 15.9% during October's market volatility, to $3.515 billion as of Oct. 31, but Fund B rose slightly, to $1.024 billion. The 1% gain was attributed to interest earned on GICs.

NYC retirement equity advisers: Bankers Trust; Batterymarch; Lazard Freres; Oppenheimer; Provident Capital; and Stein Roe.

Teachers' equity managers: Axe Core; Bankers Trust; Batterymarch; Concord Capital; John Levin; Mellon; Metropolitan Life; Prudential; Scudder, Stevens & Clark; Sound Shore; Trinity; and Wells Fargo.

NYC retirement fixed-income advisers: Bankers Trust; Bear Stearns; BEA; Chase Investors; Fiduciary Trust; Fischer, Francis, Trees & Watts; Investment Advisers; Kennedy Associates; Lehman Management; Lincoln Capital; Manufacturers Hanover; Mellon Bond Associates; Miller, Anderson, Sherrerd; PIMCO; Putnam; RCM; Smith Barney; State Street Bank; T. Rowe Price; Weiss, Peck & Greer; and Wells Fargo.

Teachers' fixed-income/short-term managers: Dimensional Fund; MacKay-Shields; Payden & Rygel; and Putnam Advisory.

Teachers' GIC managers: Bank of America; Metropolitan; New York Life; and Prudential.

Master custodian for the assets handled by the city comptroller's office is Citibank; the investment consultants are Callan Associates; SEI; and Rogers, Casey & Barksdale.

Master custodian for the teachers' and board of education assets is Irving Trust Co.; the investment consultant is Rogers, Casey & Barksdale.

Key personnel overseeing the investment management of the NYC fund are Beverly L. Hamilton, third deputy comptroller; William Paolino, bureau chief; John J. Burns, senior fixed-income analyst; and Lisa Malanchuk, senior equity analyst.

Key personnel overseeing assets of the teachers' fund are Donald S. Miller, executive director; Patrick J. Kiernan, deputy director-fiscal; and Diane R. Sisenwien, portfolio administrator.

New York Life Insurance Co.

	($ millions)
Total assets*	1,566
Defined benefit	1,366
Defined contribution	200
Employer contributions	3
Benefit payments	40

**P&I Age* estimate

NEW YORK — *Pensions & Investment Age* estimates New York Life Insurance Co.'s employee benefit assets totaled $1.566 billion as of Sept. 30, an increase of 18.9% from the $1.317 billion reported a year earlier. Defined benefit assets rose 14.2% during the same period, to $1.366 billion from $1.196 billion, *P&I Age* estimates.

All investments are handled by New York Life and MacKay-Shields Financial.

Key personnel overseeing the investment management of the fund are Donald K. Ross, chairman and president, and George A.W. Bundschuh and Harry G. Hohn, vice chairmen.

New York State & Local Retirement Systems

	($ millions)
Total assets	38,747
Defined benefit	38,747
Employer contributions	1,388
Benefit payments	1,276
In-house assets:	
Equities	15,507
Fixed income	15,334
Short term	2,289
Other	420
Passive investments:	
Indexed stocks	15,806
Alternative investments:	
Venture capital	61
LBOs	218
Real estate equity	142
Mortgages	2,757
Mortgage-backed securities	2,540
Asset mix:	
Stocks	53.4%
Bonds	25.9%
Cash equivalents	5.9%
Real estate equity	0.4%
Mortgages	7.1%
Mortgage-backed securities	6.5%
Other	0.8%

ALBANY, N.Y. — Pension assets of the New York State Common Retirement Fund rose 22.9% to $38.747 billion as of Sept. 30 from $31.533 billion a year earlier.

Equity managers: Alliance; Capital Guardian; Delaware; Equitable; Lazard Freres; Lord, Abbett; Miller, Anderson & Sherrerd; Oppenheimer; J&W Seligman; Shearson; and Wells Fargo.

Real estate managers: CIGNA; Corporate Property Investors; Eastdil; Goldman Sachs; JMB; LaSalle; J.W. O'Connor; and RREEF.

LBO managers: Kohlberg Kravis Roberts and Forstmann Little.

Venture capital managers: Bridge Capital; Crossroads; APA Excelsior; Montgomery Bridge; New York State Business Venture Partnership; Peregrine Ventures; U.S. Venture Partners.

The master trustee is Chase Manhattan; the investment consultants is Wilshire.

Key personnel overseeing the investment management of the fund are John E. Hull, deputy comptroller-investments and cash management; John J. O'Connor, chief investment officer; and William M. Barrett, director of equities and fixed-income investments.

C.F.O. salaries: April 18.

New York State Teachers' Retirement System

	($ millions)
Total assets	23,035
Defined benefit	23,035
Employer contributions	893
Benefit payments	732
In-house assets:	
Equities	10,437
Fixed income	7,149
Short term	484
Other	1,822
Passive investments:	
Indexed stocks	10,091
Alternative investments:	
Venture capital	36
Private placements	373
Real estate equity	20
Mortgages	1,669
Mortgage-backed securities	731
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	56%
Bonds	29%
Cash equivalents	2%
Real estate equity	0.1%
Mortgages	9.1%
Mortgage-backed securities	3%
Venture capital/member loans	0.8%

ALBANY, N.Y. — Total assets of the New York State Teachers' Retirement System increased 13.8% as of Sept. 30, to $23.035 billion from $20.235 billion a year earlier. After the market drop of October, assets totaled $20.543 billion, a drop of 10.8%. The asset mix shifted to 50% stocks, 34.6% bonds, 9.5% mortgages and the other asset classes unchanged.

Equity managers: Sanford C. Bernstein; Beutel Goodman; General American; Glickenhaus; Lehman Management; Manufacturers Hanover; and Oppenheimer.

Fixed-income manager: Sanford C. Bernstein.

Real estate managers: Aetna; Equitable; Goldman, Sachs; and Prudential.

Venture capital managers: Mesirow Capital Partners; Excelsior II; New York State Business Venture; and Norstar Venture.

The master custodian is Bankers Trust; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are Harold N. Langlitz, executive director; Edward J. Reno Jr., securities investment officer; and Lowell A. Blom, mortgage officer.

North American Philips

	($ millions)
Total assets	1,347
Defined benefit	1,086
Profit-sharing	5
Thrift or savings/401(k)	256
Employer contributions	5
Benefit payments	27
Passive investments:	
Indexed stocks	49
Dedicated/immunized	93
Alternative investments:	
International equity	87
Real estate equity	86
Mortgage-backed securities	160
Hedging devices:	
Fixed-income futures	Y
Asset mix:	
Stocks	71%
Bonds	2%
Cash equivalents	4%
Real estate equity	8%
Mortgage-backed securities	15%

NEW YORK — The total benefit assets at North American Philips increased 28.5% to $1.347 billion from $1.048 billion for the 12 months ended Sept. 30. Because of market volatility, assets fell 3.5% to $1.3 billion as of Oct. 31. The asset mix as of Oct. 31 was 66% stocks, 4% bonds, 5% cash equivalents, 10% real estate equity and 15% mortgage-backed securities, according to Kathy Pino, pension finance administrator.

Equity managers: Bankers Trust; Barrow, Hanley, Mewhinney & Strauss; Delaware; Franklin; Lehman Management; Lord, Abbett; Mellon Pictet; Morgan Grenfell; Nicholas-Applegate; Oechsle; Reich & Tang; Rosenberg; and State Street.

Fixed-income managers: Lincoln Capital and PIMCO.

Real estate managers: Coldwell Banker; Equitable; PMRealty; and TCW.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are C.P. Dunn, director-pension finance and investment and Ms. Pino.

North Carolina Retirement Systems

	($ millions)
Total assets	12,446
Defined benefit	12,446
Employer contributions	517
Benefit payments	498
In-house assets:	
Fixed income	9,094
Alternative investments:	
Private placements	286
Real estate	170
Mortgage-backed securities	1,385
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	23%
Bonds	61%
Real estate	1%
Mortgage-backed securities	15%

RALEIGH, N.C. — Total assets of the North Carolina Retirement Systems rose 24.4% to $12.446 billion as of Sept. 30, 1987, from the $10.003 billion (book value) reported as of June 30, 1986.

As a result of the market crash, assets dropped only 1.9%, to $12.115 billion, as of Oct. 31. The asset allocation has not been changed as a result of the drop.

Equity advisers: Alliance (discretionary); First Citizens Bank; First Union National Bank; NCNB; Thorndike Doran Paine & Lewis; and First Wachovia.

Real estate managers: Aetna; CIGNA Capital; Goldman, Sachs; NCNB; Security Capital; and First Wachovia.

The master custodian is Bank of New York.

Key personnel overseeing the investment management of the fund are Harlan E. Boyles, state treasurer, and C. Douglas Chappell, deputy treasurer/director-investment and banking division.

Northrop Corp.

	($ millions)
Total assets	3,402
Defined benefit	2,519
Defined contribution	42
Profit-sharing/401(k)	841
Employer contributions	30
Benefit payments	48
Asset mix:	
Stocks	70%
Bonds	22%
Cash equivalents	8%

LOS ANGELES — Northrop Corp. had $3.402 billion in total employee benefit assets as of Sept. 30, an increase of 25.9% from $2.702 billion the previous year. Defined benefit assets increased 26.7% to $2.519 billion as of Sept. 30, from $1.988 billion the previous year.

Because of market volatility, however, defined benefit assets declined 16.7% to $2.099 billion as of Oct. 31. The asset mix changed slightly as of Nov. 1, to 64% stocks, 26% fixed income and 10% cash.

Equity managers: Capital Guardian; Forstmann-Leff; Jennison; Putnam Advisory; RCM; and State Street Research.

Fixed-income managers: Fischer, Francis, Trees & Watts and Jennison.

The master trustee is Bankers Trust.

The key person overseeing the investment management of the fund is Richard B. Lohrer, vice president-trust investments.

NYNEX Corp.

	($ millions)
Total assets	14,336
Defined benefit	11,966
Defined contribution	2,370
Employer contributions	49
Benefit payments	436
In-house assets:	
Fixed income	201
Passive investments:	
Indexed stocks	4,817
Indexed bonds	1,076
Alternative investments:	
International equities	203
Venture capital	24
Real estate equity	732
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	63%
Bonds	31%
Real estate equity	6%

NEW YORK — NYNEX Corp.'s employee benefit assets rose 19.8% in the year ended Sept. 30, to $14.336 billion from $11.962 billion. Defined benefit assets in the same period rose 18.6% to $11.966 billion from $10.089 billion.

Equity managers: American National Bank; Barrow Hanley Mewhinney & Strauss; Batterymarch; Capital Guardian International; Daniel Breen; Dimensional Fund; Fidelity Management Trust; Franklin Portfolio; Manufacturers Hanover; McCowan; Mellon-Pictet; Trinity; TCW; and Wells Fargo Investment.

Fixed-income managers: Boston Co.; Brown Brothers Harriman; Jennison; John Hancock; Lincoln Capital; Manufacturers Hanover; Massachusetts Financial; Miller Anderson Sherrerd; Standish Ayer & Wood; State Street Research; and Western Asset Management.

Real estate managers: Aldrich Eastman & Waltch; Corporate Property Investors; Heitman; and McMahan.

The master trustee is Mellon Bank.

Key personnel overseeing the investment management of the fund are L.R. Smart, corporate director-finance, and J.E. Clines, director-investment management.

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Police & Firemen's Disability & Pension Fund of Ohio

	($ millions)
Total assets	2,502
Defined benefit	2,502
Employer contributions	156
Benefit payments	201
In-house assets:	
Fixed income	1,132
Short term	355
Passive investments:	
Indexed stocks	272
Alternative investments:	
Venture capital	12
Private placements	1
Real estate equity	108
Mortgages	10
Mortgage-backed securities	221
Asset mix:	
Stocks	35.4%
Bonds	36.4%
Cash equivalents	14.2%
Real estate equity	4.3%
Mortgages	0.4%
Mortgage-backed securities	8.8%
Venture capital	0.5%

COLUMBUS, Ohio — The Police & Firemen's Disability & Pension Fund of Ohio's total benefit assets increased 11.8% to $2.502 billion from $2.237 billion for the year ended Sept. 30.

Total assets fell 5.8% to $2.358 billion from Sept. 30 through Oct. 31, according to a spokeswoman for the fund.

Equity managers: Axe Core; Bankers Trust; Duff & Phelps; Society National Bank; Travelers Investment; and Value Line.

Real estate managers: Schroder and Trident/Meyer.

Venture capital managers: Cardinal Capital and Primus.

The master custodian is Bankers Trust. SEI is the investment management consulting firm for stocks and bonds; Townsend Group is the real estate consultant.

Overseeing the investment management of the fund is Theodore G. Hall, investment manager.

Ohio Public Employees' Retirement System

	($ millions)
Total assets	14,985
Defined benefit	14,985
Employer contributions	650
Benefit payments	653
In-house assets:	
Equities	4,408
Fixed income	9,244
Short term	1,106
Other	35
Alternative investments:	
Venture capital	35
Real estate equity	192
Mortgage-backed securities	6,000
Asset mix:	
Stocks	29.5%
Bonds	21.0%
Cash equivalents	7.4%
Real estate equity	1.2%

Mortgage-backed securities	40%
Venture capital	0.2%

COLUMBUS, Ohio — Assets of the Ohio Public Employees' Retirement System grew 10.4% to $14.985 billion as of Sept. 30 from $13.567 billion a year earlier. In the October market drop, the assets declined 4.6%, to roughly $14.3 billion as of Oct. 31.

Equity adviser: Value Line.

Real estate managers: CIGNA; NCNB; Rothschild; Security Capital; and Wells Fargo.

The master custodian is the state treasurer.

The key person overseeing the investment management of the fund is Robert A. McLaughlin, investment officer.

School Employees Retirement System of Ohio

	($ millions)
Total assets	2,409
Defined benefit	2,409
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	205
Fixed income	827
Short term	165
Other	249
Passive investments:	
Indexed stocks	854
Alternative investments:	
Venture capital	19
Real estate equity	262
Mortgages	76
Mortgage-backed securities	372
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	33.7%
Bonds	23.4%
Cash equivalents	8.1%
Real estate equity	11.6%
Mortgages	3.4%
Mortgage-backed securities	18.9%
Venture capital	0.9%

COLUMBUS, Ohio — Assets of the School Employees Retirement System of Ohio increased 29.9% to $2.409 billion as of Sept. 30 from $1.854 billion a year earlier.

Equity managers: Mellon Capital.

The investment consultant is Ronald Karp Associates.

Paul M. Kubinsky, director-investments, oversees investment management of the fund.

State Teachers Retirement System of Ohio

	($ millions)
Total assets	14,821
Defined benefit	14,821
Employer contributions	625
Benefit payments	735
In-house assets:	
Equities	5,660
Fixed income	6,490
Short term	1,059
Other	1,612
Passive investments:	
Dedicated/immunized	200
Alternative investments:	
Venture capital	20
Private placements	13
Real estate equity	1,588
Mortgages	920
Mortgage-backed securities	1,594
Hedging devices:	
Stock options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	38%
Bonds	27%
Cash equivalents	7%
Real estate equity	11%
Mortgages	6%
Mortgage-backed securities	11%

COLUMBUS, Ohio — Assets of the State Teachers Retirement System of Ohio increased 18.7% to $14.821 billion from $12.484 billion in the 12 months ended Sept. 30. Fund officials declined to say how the October market drop affected the assets.

Equity and bond adviser: Thorndike, Doran, Paine & Lewis.

Real estate adviser: Thomas Karsten Associates.

The master custodian is the state treasurer.

Key personnel overseeing the investment management of the fund are C. James Grothaus, executive director; Stephen A. Mitchell, assistant executive director-investments; and Daniel M. Szente, assistant director-investments.

Mutual funds: Aug. 8.

Oklahoma Teachers' Retirement System

	($ millions)
Total assets	1,735
Defined benefit	1,735
Employer contributions	125
Benefit payments	200
In-house assets:	
Short term	210
Alternative investments:	
Mortgage-backed securities	2
Asset mix:	
Stocks	19.5%
Bonds	70.5%
Cash equivalents	9%
Mortgage-backed securities	1%

OKLAHOMA CITY — Total assets of the Oklahoma teachers' fund increased by 9.1% to $1.735 billion from $1.59 billion for the year ended Sept. 30.

Total assets were approximately $1.67 billion on Nov. 1, a decline of 3.7% from Sept. 30.

Equity managers: Capital Advisors; First Investment; Tom Johnson Investment; Lazard Asset Management; Liberty National Bank; Bank of Oklahoma.

Fixed-income managers: First Investment; Tom Johnson; Liberty National; Bank of Oklahoma; Siebel Asset.

The master custodian is First Interstate Bank, Oklahoma; the investment consultant is Kidder, Peabody.

Key personnel overseeing the investment management of the fund are Tommy C. Beavers, executive secretary; Jo Witt, investment director; Bill Puckett, investment officer.

Central Pension Fund of the International Union of Operating Engineers and Participating Employers

	($ millions)
Total assets	1,718
Defined benefit	1,718
Employer contributions	96
Benefit payments	72
Passive investments:	
Indexed stocks	418
Indexed bonds	503
GICs	111
Alternative investments:	
Mortgages	103
Mortgage-backed securities	132
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	31.3
Bonds	38.5%
Cash equivalents	14.8%
Mortgages	9%
GICs	6.4%

WASHINGTON — Total benefit assets and pension assets as of Sept. 30 increased by 13% to $1.718 billion. As a result of the market drop and other factors, total assets as of Nov. 1 were $1.637 billion, a decrease of 4.7%. The fund's equity investment decreased by 5.5% as a result of the drop, but the group plans to keep its percentage allocation in stocks constant by buying more equities.

Equity managers: Analytic Investment Management; Batterymarch; S.C. Bernstein; Concord; and Wells Fargo.

Fixed-income managers: Criterion; Loomis Sayles; Lowe Brockenbough; STW; Tiernye and Tattersall; and Wells Fargo.

Real estate manager: Aldrich Eastman and Waltch.

The master custodian is State Street Bank; the investment consultant is Ennis, Knupp.

Key personnel overseeing the investment management of the fund are Jack E. Johnson, director of finance, and Robert E. Birch, assistant to the director of finance.

Oregon Public Employes Retirement System

	($ millions)
Total assets	8,789
Defined benefit assets	8,789
Employer contributions	410
Benefit payments	260
In-house assets:	
Fixed income	2,500
Alternative investments:	
International equities	766
Venture capital	67
LBOs	262
Real estate equity	277
Mortgages	425
Mortgage-backed securities	165

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Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	58%
Bonds	26%
Cash equivalents	1%
Real estate equity	4%
Mortgages	5%
Mortgage-backed securities	1%
Venture capital	1%
LBOs	4%

SALEM, Ore. — The benefit assets of the Oregon Public Employes Retirement System increased 34.8% in the year ended Sept. 30, to $8.789 billion from $6.522 billion.

Because of the market conditions in October, the assets decreased 12.8% to $7.667 billion as of Oct. 31.

Equity managers (Domestic): Atalanta/Sosnoff; Batterymarch; BEA; Columbia; Cutler; Franklin Asset; Froley, Revy; General American; Harris Associates; Hotchkis & Wiley; Olympic; Pinnacle; Quest Advisory; RCM; Fayez Sarofim; George B. Springman; Thompson-Rubinstein; and William D. Witter.

(International): ABD; Cursitor-Eaton; Daiwa; Globe Finlay; Matushka Moser; Nomura; Rowe Price-Fleming; and Wertheim Philippe.

Real estate manager: Alex. Brown.

LBO manager: Kohlberg Kravis Roberts.

The master custodian for fixed income is Chase, and for equities, First Interstate of Oregon. The investment consultants are Frank Russell and Wilshire.

Key personnel overseeing the investment management of the fund are James C. George, investment manager; Bill Unverzagt, senior investment officer-fixed; Jim Yasutome, senior investment officer-short term; and Terry Canby, senior investment officer-real estate.

Owens-Illinois Inc.

	($ millions)
Total assets	2,230
Defined benefit	1,950
Defined contribution	280
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	170
Alternative investments:	
International equities	330
International bonds	66
Real estate equity	195
Asset mix:	
Stocks	55%
Bonds	13%
Cash equivalents	4%
Real estate equity	10%
International	18%

TOLEDO, Ohio — Owens-Illinois Inc.'s total employee benefit assets increased 18.9% to $2.23 billion as of Sept. 30 from $1.875 billion a year earlier. Defined benefit assets alone increased 20% during the 12 months, to $1.95 billion from $1.625 billion.

According to Money Market Directory, the managers of the assets are as follows.

Equity managers (Domestic): Dimensional; Harbor Capital Advisors; Jennison; Lazard Freres; State Street Bank; and Wright.

(International): Grantham, Mayo, Van Otterloo, Marsh & Cunningham, Morgan Grenfell.

Fixed-income managers (Domestic): Jennison; Lazard; PIMCO; State Street Bank; and Toledo Trust.

(International): Julius Baer.

Real estate managers: Aldrich, Eastman & Waltch; American Agricultural; Boston Co.; and RREEF.

Venture capital manager: Emerging Growth Partners.

GIC managers: Capitoline; Metropolitan Life; Prudential Asset; and State Mutual of America.

Cash manager: First Wachovia.

Oil & gas manager: RPI Institutional.

The master trustee is First Wachovia; the investment consultant is Richards & Tierney.

Key personnel overseeing the investment management of the fund are R.W. Lock, vice president, treasurer and assistant chief financial officer, and Ronald C. Boller, director-benefit finance.

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Pacific Gas and Electric Co.

	($ millions)
Total assets	3,560
Defined benefit	2,624
Defined contribution	936
Employer contributions	146
Benefit payments	118
Passive investments:	
Indexed stocks	378
GICs	24
Alternative investments:	
International equities	179
Real estate equity	161
Asset mix:	
Stocks	74%
Bonds	15%
Cash equivalents	1%
Real estate equity	6%
GICs	1%
Annuities	3%

SAN FRANCISCO — As of Sept. 30, Pacific Gas and Electric Co.'s total employee benefit assets increased 8.7% to $3.56 billion from $3.275 billion a year earlier. Defined benefit assets increased 26.5% during the same period, to $2.624 billion from $2.075 billion.

Because of the market volatility during October, the defined benefit assets fell 16.2% to $2.2 billion, according to Peter F. Corippo, senior financial analyst.

Equity managers: American Express Asset; Barrow Hanley Mewhinney & Strauss; Arnhold and S. Bleichroeder; Capital Guardian; Dodge & Cox; Geewax, Terker; Jundt/Capen; Loomis, Sayles; McCowan; Metropolitan Life; Miller Anderson Sherrerd; Oechsle; Olympic; Prudential Asset; RCM; and Wells Fargo Investment.

Fixed-income managers: Sanford C. Bernstein; Fischer Francis Trees & Watts; Miller Anderson Sherrerd; and Prudential Asset.

Real estate managers: Corporate Property Investors; JMB; Metropolitan Life; Prudential; RREEF; and TCW.

GIC manager: Metropolitan Life.

The master trustee is State Street Bank; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Sunny Oberoi, director-pension fund management, and Peter K. Corippo, senior financial analyst.

Pacific Lighting Corp.

	($ millions)
Total assets	1,341
Defined benefit	855
401(k)	486
Employer contributions	40
Benefit payments	28
Passive investments:	
Indexed stocks	258
GICs	24
Alternative investments:	
International equities	46
Venture capital	14
Real estate equity	58
Mortgages	12
Asset mix:	
Stocks	60%
Bonds	13%
Cash equivalents	7%
Real estate equity	7%
Mortgages	2%
GICs	2%

LOS ANGELES — Pacific Lighting Corp.'s total benefit assets increased 22.9% to $1.341 billion from $1.091 billion during the year ended Sept. 30. Because of the market volatility during October, total assets dropped 14.6% to $1.145 billion as of Oct. 31, according to Thomas D. Rollinger, assistant treasurer at the fund.

Equity managers: Cashman Farrell; Daiwa; Dimensional; Fidelity Management Trust; Jennison; Morgan Grenfell; Nicholas-Applegate; Nikko; Olympic Capital; Scudder Stevens & Clark; Wall Street Associates; and Wells Fargo.

Fixed-income managers: Aetna; Fiduciary Trust; and MacKay.

Real estate managers: Aetna; Copley; and Heitman.

GIC manager: Aetna.

The master trustee is Bank of America; the investment consultant is Wilshire Associates.

Mr. Rollinger oversees investment management of the fund.

Pacific Telesis Group

	($ millions)
Total assets*	9,867
Defined benefit	8,975
Thrift or savings/401(k)	892

*From Money Market Directory

SAN FRANCISCO — Pacific Telesis Group's employee benefit assets rose 16.1% to $9.867 billion from the $8.5 billion reported Sept. 30, 1986, according to the Money Market Directory, which provided the most recent figures and listing of managers.

Equity managers: (Domestic) Delphi; Dodge & Cox; Hotchkis and Wiley; IDS Advisory; in-house; Jundt/Capen; Lord Abbett; Morgan Grenfell Capital; Pilgrim Baxter Greig; RCM Capital Management; Sit Investment; Thompson Siegel & Walmsley; United Capital Management; and Wellington Management.

(International): Capital Guardian; Fidelity International; Morgan Grenfell Investment Services; N.M. Rothschild.

Bond managers: Dodge & Cox; Fischer Francis Trees & Watts; inhouse; Pacific Investment Management; Solomon Asset Management; and Western Asset Management.

Real estate managers: Copley; Jones Lang Wootton; LaSalle; and TCW.

Cash and short-term manager: Discount Corp. of New York.

Other managers: Mellon Capital.

The master trustee is Bank of America; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Jeffrey L. Winter, manager-pension fund, and Honor R. Fetherston, manager-investment administration and real estate.

Pan American World Airways Inc.

	($ millions)
Total assets	1,445
Defined benefit	610
Defined contribution	835
Employer contributions	120
Benefit payments	95
Passive investments:	
Indexed stocks	32
Alternative investments:	
International equities	45
Asset mix:	
Stocks	9%
Bonds	15%
Cash equivalents	3%
IPGs	73%

NEW YORK — Pan American World Airways Inc.'s retirement assets increased 10.6% to $1.445 billion from $1.307 billion during the 12-month period ended Sept. 30. Defined benefit assets grew 11.7% during the same period, to $610 million from $546 million.

Equity managers: (Domestic) Ardsley Partners; Bankers Trust; Delaware; GAMCO; Lord, Abbett; Nicholas-Applegate; Putnam; Reich & Tang; TCW; and Waite & Correnti.

(International) Alliance Capital and Worldinvest.

Fixed income managers: Bankers Trust; Fischer, Francis, Trees & Watts;

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Mellon Bond; and Putnam.

GIC managers: CNA; John Hancock; New England Life; and Travelers.

IPG managers: Connecticut General and John Hancock.

Global multiasset manager: First Chicago.

The master trustee is Bankers Trust; the investment consultant is Hamilton & Co.

Key personnel overseeing the investment management of the fund are C.J. David Davies, senior vice president, chief financial officer and treasurer; Carl F. Stillwell, system director-benefits; and George J. Mehm Jr., manager-pensions/financial.

J.C. Penney Co. Inc.

	($ millions)
Total assets*	3,212
Defined benefit	1,301
Thrift or savings/401(k)	1,911
Employer contributions	NA
Benefit payments	NA

**P&I Age* estimate

NEW YORK — J.C. Penney's total assets grew an 21% during the nine months ended Sept. 30, according to *Pensions & Investment Age* estimates.

Managers: (according to Money Market Directory) Batterymarch; Fidelity International; Geo Capital; Grantham, Mayo, Van Otterloo; Lieber; Miller, Anderson & Sherrerd; RCM Capital; RREEF; Tallasi; Robert Torray; TCW.

Key personnel overseeing the investment management of the fund are Donald A. McKay, vice president-treasurer and Thomas A. Clerkin, manager of financial support.

Pennsylvania Public School Employes' Retirement System

	($ millions)
Total assets	12,021
Defined benefit	12,021
Employer contributions	850
Benefit payments	608
In-house assets:	
Fixed income	270
Passive investments:	
Indexed stocks	1,369
Indexed bonds	1,699
Alternative investments:	
Venture capital	42
Real estate equity	508
Mortgages	457
Mortgage-backed securities	685
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	38.5%
Bonds	33.2%
Cash equivalents	14.2%
Real estate equity	4.2%
Mortgages	3.8%
Mortgage-backed securities	5.7%
Venture capital	0.4%

HARRISBURG, Pa. — Total pension assets of the fund increased 19% as of Sept. 30. Total assets after the market drop of October were $11,177 million. The asset mix following the crash was 33% equities; 37% fixed income; 15% cash; 5% real estate; 4% mortgages; 6% mortgage-backed securities; and 0.38% venture capital.

Equity managers: Bankers Trust; Cashman & Farrell; Delaware; Dreman; Mellon Bank; Miller Anderson Sherrerd; Oppenheimer; Provident Capital; and Evaluation Associates.

Fixed-income managers: Criterion; Glenmede; Loomis Sayles; Mellon Bank; Miller Anderson Sherrerd; Pittsburgh National Bank; PIMCO; and Putnam.

Real estate managers: Fidelity Bank and Jones Lang Wootton.

Options managers: Webster and Oppenheimer Options.

Venture capital managers: NEPA; Trivest; and Century IV.

The master custodian is First Pennsylvania Bank; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are Samuel A. McCullough, chairman of the board; James A. Perry, executive director; and Clay B. Mansfield, chief investment officer.

Profiles of the leading international investment advisers will appear June 27.

Pennsylvania State Employes' Retirement System

	($ millions)
Total assets	7,965
Defined benefit	7,965
Employer contributions	332
Benefit payments	526
Passive investments:	
Indexed stocks	1,899
Indexed bonds	637
Alternative investments:	
International bonds	12
Venture capital	52
Real estate equity	392
Mortgages	484
Mortgage-backed securities	229
Asset mix:	
Stocks	50.2%
Bonds	29.8%
Cash equivalents	5.5%
Real estate equity	4.9%
Mortgages	8.9%
Venture capital	0.7%

HARRISBURG, Pa. — The market value of the Pennsylvania State Employes' Retirement System's total pension assets rose to $7.965 billion from $6.73 billion for the year ended Sept. 30, an increase of 18.4%.

The market value of the fund's assets dropped 10.2% to $7.152 billion Oct. 30.

Equity managers: Fred Alger; Alliance; Barrow Hanley; First Pennsylvania Bank; Geewax Tucker; Glickenhaus; McGlinn; Mellon; Pilgrim, Baxter, Greig; Trinity; and Wells Fargo.

Fixed-income managers: Delaware; Fidelity; W.R. Huff; Mellon; Miller, Andersen & Sherrerd; and Payden & Rygel.

Real estate managers: Aetna; Corporate Property Investors; F.I.A. Associates; John Hancock; JMB; Prudential; and Security Capital.

Venture capital managers: APA/Fostin and PA Venture Capital.

The master custodians are the state treasurer and First Pennsylvania Bank; the investment management consultants are Wilshire and Ronald Karp.

Key personnel overseeing the investment management of the fund are Kenneth G. Mertz II, chief investment officer; Karen Nicely, assistant chief investment officer; and David D. Burnett, investment analyst.

City of Philadelphia Board of Pensions & Retirement

	($ millions)
Total assets	1,587
Defined benefit	1,587
Employer contributions	150
Benefit payments	198
In-house assets:	
Short term	113
Alternative investments:	
Venture capital	3
Real estate equity	27
Mortgage-backed securities	3
Asset mix:	
Stocks	46.2%
Bonds	42.7%
Cash equivalents	7.2%
Real estate equity	1.7%
Mortgage-backed securities	0.2%
Venture capital	0.2%
CDs & subordinated notes	1.8%

PHILADELPHIA — The Philadelphia Municipal Pension Fund's assets increased 16.9% to $1.587 billion from $1.358 billion during the year ended Sept. 30. Assets declined 9.2% during October, dropping to $1.44 billion.

Stocks dropped to 40.4% of assets during the month from 46.2%. Meanwhile, bonds rose to 48.4% from 42.7%, while other asset classes changed marginally.

Equity managers: Atalanta/Sosnoff; Delaware; Eaton Vance; Kemper Financial; Miller, Anderson & Sherrerd; and Provident Capital.

Fixed-income managers: Criterion; Drexel Burnham Lambert; Lehman; and Wentworth, Hauser & Violich.

Real estate managers: Copley; Dover Pension Investors; Hall Venture; JMB; MIG Realty; and Security Capital.

Venture capital managers: Genesis Seed Fund; and Meridian Venture Partners.

The master custodian is First Pennsylvania; the investment consultants are SEI and Frank Russell.

Key personnel overseeing the investment management of the fund are Peter Crescitelli, executive director;

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Philip Morris Inc.

	($ millions)
Total assets	1,892
Defined benefit assets	1,214
Profit-sharing	678
Employer contributions	86
Benefit payments	32
Alternative investments:	
International equities	134
Real estate equity	8
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	67%
Bonds	21%
Cash equivalents	11%
Real estate equity	1%

NEW YORK — Total benefit assets of Philip Morris Inc. increased 24.2% to $1.892 billion as of Sept. 30, 1987, from $1.524 billion as of June 30, 1986. Defined benefit assets increased 18.7% during the same period to $1.214 billion from $1.023 billion.

Equity managers (Domestic): Sanford Bernstein; Glickenhaus; Miller, Anderson & Sherrerd; Rosenberg; and State Street Research.

(International): Morgan Grenfell.

Fixed-income managers: Scudder, Stevens & Clark and State Street Bank.

Real estate manager: JMB.

The master trustee is State Street Bank.

Key personnel overseeing the investment management of the fund are Herbert Millington, deputy treasurer; Mary Lee Calimano, manager-financial services; and John Pecora, financial analyst.

Plumbers, National Headquarters

	($ millions)
Total assets*	1,598
Defined benefit	1,598
Employer contributions	57

*From Money Market Directory

WASHINGTON — Total benefit assets of the Plumbers, National Headquarters are $1.598 billion, according to information from the Money Market Directory.

Managers: Capital Management; ASB Capital Management.

The master custodian is Capital Management.

Key personnel overseeing the investment management of the fund are Marvin Boede, general president; Charles J. Habig, secretary and treasurer, and Ernest Soderstrom and Marsha Pugh, administrators.

PPG Industries Inc.

	($ millions)
Total assets*	1,800
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

PITTSBURGH — As of Sept. 30, *Pensions & Investment Age* estimates PPG Industries Inc.'s total employee benefit assets increased 22% to $1.8 billion from $1.476 billion a year earlier.

The estimate was based on the fund's Sept. 30, 1986, asset mix of 49% stocks; 44% bonds; 6% cash equivalents; and 1% GICs.

According to the Money Market Directory, the investment managers are as follows:

Managers: BEA Associates; Boston Co. Institutional Investors; Boston Co. Structured Investment Products; Fidelity Management Trust; Leland O'Brien Rubinstein; Lipper Analytical Services; Lowry, Raclin, Harrell & Howerdd; Minton/Newbold's; Morgan Grenfell; Neuberger & Berman; Phoenix; Reich & Tang; Smith Barney; Travelers.

The master custodian is Mellon Bank; the investment consultant is Lowry, Raclin, Harrell & Howerdd.

Overseeing the investment management of the fund is Charles Elmer, manager-pension investment administration.

The real estate directory will be published Sept. 19.

The Board of Pensions of the Presbyterian Church (U.S.A.)

	($ millions)
Total assets	2,122
Defined benefit	2,122
Employer contributions	100
Benefit payments	90
In-house assets:	
Short term	10
Passive investments:	
Indexed stocks	559
Indexed bonds	167
GICs	221
Alternative investments:	
International equities	91
International bonds	5
Venture capital	na
Real estate equity	29
Asset mix:	
Stocks	53.1%
Bonds	27.6%
Cash equivalents	7.6%
Real estate equity	1.3%
GICs	10.4%

PHILADELPHIA — Total pension assets increased 21.3% to $2.122 billion from $1.75 billion for the year ended Sept. 30. Assets totaled $1.883 billion after the market drop of October, a decrease of 11.3%. Equities dropped to 44.3% of total assets after the crash while cash and bonds increased purely by virtue of the drop in equities — not through trading activity by the fund.

Equity managers: (Domestic) Alger; J.P. Morgan; TRUSCO; and Wells Fargo. (International) Templeton.

Fixed-income managers: (Domestic) CoreStates; J.P. Morgan; TRUSCO; and Wells Fargo. (International) J.P. Morgan.

Real estate manager: CIGNA.

GIC managers: Aetna; Bankers Life; Hancock; Mutual Life of New York; Transamerica; and Travelers.

The master trustee is The Mellon Bank; the investment consultant is Callan Associates Inc.

The key person overseeing the investment management of the fund is Wm. Irwin Arbuckle II, vice president-investments and treasurer.

Procter & Gamble Co.

	($ millions)
Total assets*	3,580
Defined benefit	168
Profit-sharing	3,331
401(k)	81
Employer contributions	193
Benefit payments	221

*as of June 30, 1987

In-house assets:	
Equities	2,237
Fixed income	876
Short term	218
Passive investments:	
Indexed stocks	47.5
Indexed bonds	44.4
GICs	938.4
Asset mix:	
Stocks	67%
Bonds	1%
Cash equivalents	6%
GICs	26%

CINCINNATI — Procter & Gamble Co.'s total employee benefit assets rose 20% in the year ended June 30, 1987, to $3.58 billion, from $2.98 billion.

Total employee benefit assets dropped fund 8% to $3.29 billion as of Oct. 31, as a result of market volatility. During the four months since June, the defined benefit assets fell 10.7% to $150.4 million, while the profit-sharing assets fell 8% to $3.06 billion. Broken down, the profit-sharing asset mix, as of Oct. 31, was $2.03 billion in equities, $904 million in fixed income and $131.4 million in cash equivalents.

The profit-sharing fund, P&G's main retirement vehicle, is run internally. The equity portion of the profit-sharing fund is all in P&G stock. The above asset mix reflects the allocation of the profit-sharing fund.

The managers listed below run the defined benefit assets of the company's Norwich and Richardson-Vicks units.

Equity managers: Ariel Capital; Atlanta Capital; Babson; IDS Advisory; Northern Trust.

Fixed-income managers: Atlanta Capital; Northern Trust; Wells Fargo.

The Norwich fund's master trustee is Northern Trust; the Richardson-Vicks fund's master trustee is Bank of New York. P&G's profit-sharing fund is trusteed internally. The investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Edwin H. Eaton, vice president and treasurer, and J.R. Smith, manager-pension plan coordination.

Prudential Insurance Company of America

	($ millions)
Total assets	4,294
Defined benefit	4,294
Thrift or savings/401(k)	na
Employer contributions	32
Benefit payments	136
Passive investments:	
Indexed stocks	524
Indexed bonds	111
Alternative investments:	
International equities	664
International bonds	137
Venture capital	9
Real estate equity	510
Asset mix:	
Stocks	62%
Fixed income	22%
Cash equivalents	4%
Real estate equity	12%

NEWARK, N.J. — The market value of Prudential Insurance Co. of America' defined benefit assets increased 18.8% to $4.294 billion as of Sept. 30 from $3.614 billion a year earlier. The company did not provide data on its savings or 401(k) plans.

All retirement plan funds are managed by Prudential.

A committee of three senior officers of the insurance company oversee the pension fund.

R

Raytheon Co.

	($ millions)
Total assets	2,455
Defined benefit	1,984
Defined contribution	30
401(k)	441
Employer contributions	130
Benefit payments	50
Passive investments:	
Indexed stocks	536
Dedicated/immunized	288
Alternative investments:	
Real estate equity	30
Asset mix:	
Stocks	72%
Bonds	18%
Cash equivalents	8%
Real estate equity	2%

LEXINGTON, Mass. — Raytheon's total employee benefit plan assets increased 33.4% to $2.455 billion from $1.84 billion for the year ended Sept. 30. By Oct. 31, total assets were down 14.5% to $2.1 billion.

The asset mix after the crash changed to 66% stocks from 72% before the crash, and toward bonds.

Equity managers: Bankers Trust; Batterymarch; Boston Co.; Brignoli, Cur[illegible] & Roberts; Dewey Square; Fidelity; Loomis Sayles; Matrix; Paribas; Rosenberg; State Street Research; and Sun Bank.

Fixed-income managers: Richmond Capital Management and Loomis Sayles.

The master trustee is Boston Safe Deposit & Trust.

Key personnel overseeing the investment management of the fund are Herbert Deitcher, vice president and treasurer; W. Bruce Livingston, manager-employee benefits financing; and Steven S. DeMeo, investment analyst.

Employee Retirement System of Rhode Island

	($ millions)
Total assets	1,809
Defined benefit	1,809
Employer contributions	105
Benefit payments	100
In-house assets:	
Equities	824
Fixed income	611
Short term	374
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	45.6%
Bonds	33.7%
Cash equivalents	20.7%

PROVIDENCE, R.I. — The state of Rhode Island's pension fund increased 22% to $1.809 billion from $1.483 billion for the year ended Sept. 30.

After the stock market plunge of Oct. 19, the market value of the plan's assets dropped by 8.3% Oct. 22 figures compared with the asset value at the end of September. The Oct. 22 asset allocation was 40.4% stocks, 38.2% bonds and 21.4% cash.

The custodian is the Rhode Island Hospital Trust Bank.

Jerome Williams, deputy general treasurer, is the fund's chief executive.

RJR Nabisco Inc.

	($ millions)
Total assets	3,540
Defined benefit	2,600
Thrift or savings/401(k)	940
Employer contributions	83
Benefit payments	120
In-house assets:	
Equities	187
Fixed income	477
Passive investments:	
Dedicated/immunized	477
Alternative investments:	
International equities	30
Venture capital	24
Real estate equity	110
Asset mix:	
Stocks	58%
Bonds	21%
Cash equivalents	15%
Real estate equity	4%
International	1%
Venture capital	1%

ATLANTA, Ga. — RJR Nabisco's employee benefit assets grew 11.9% to $3.54 billion from $3.164 billion during the year ended Sept. 30.

Equity managers: (Domestic) Batterymarch; Campbell Advisors; Capital Guardian; Cooke-Bieler; Delaware Investment; C.J. Lawrence; Lieber; Reich & Tang; Schafer Capital; Warburg Pincus. (International) Globe Finlay.

Fixed-income managers: PIMCO, Scudder, Stevens.

401 (k)/thrift: Spears-Benzac; Vanguard; Wilkens & Nanovic.

Real estate managers: Copley, Mellon Capital; First Wachovia.

The master trustee is First Wachovia; the investment consultants are Frank Russell and Hamilton, Johnston.

Key person overseeing the investment management of the fund is R.E. Schultz, vice president-pension asset management.

Rockwell International

	($ millions)
Total assets*	9,200
Defined benefit	7,400
Thrift or savings	1,800
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

PITTSBURGH — Employee benefit assets at Rockwell International increased 13.3% to $9.2 billion as of Sept. 30 from $8.122 billion a year earlier, *Pensions & Investment Age* estimates. Defined benefit assets increased an estimated 23.6% during the same period, to $7.4 billion from $5.936 billion.

According to the Money Market Directory, Rockwell's money managers are as follows.

Managers: Beutel, Goodman; Boston Co. Real Estate; Capital Guardian; Cashman, Farrell; Chase Investors; CIGNA; First Interstate; First Pacific; First RepublicBank; Hotchkis and Wiley; Manufacturers Bank; Metropolitan Life; J.P. Morgan; Morgan Stanley Asset; National Bank/Detroit; PRIMECAP; Provident Investment Counsel; Fayez Sarofim; Scudder, Stevens & Clark; Seafirst Bank; Security Pacific Investment; Security Pacific National; Siphron & Meyers; Stralem; Tower Capital; Transamerica; Vanguard; Waite & Correnti; and Western Asset.

The master trustees are Mellon Bank and National Bank of Detroit.

Key personnel overseeing the investment management of the fund are E. William Altstaetter, vice president-pensions, insurance & risk management; Lee H. Cramer, treasurer; and Susan Leathers, director-pension assets management.

Defined contribution plans will be highlighted July 11.

S

City & County of San Francisco Employees Retirement System

	($ millions)
Total assets	3,189
Defined benefit	3,189
Employer contributions	250
Benefit payments	168
In-house assets:	
Equities	104
Fixed income	1,075
Passive investments:	
Indexed stocks	217
Alternative investments:	
International equities	241
International bonds	235
Real estate equity	113
Mortgages	9
Mortgage-backed securities	293
Asset mix:	
Stocks	38.2%
Bonds	43%
Cash equivalents	5.8%
Real estate equity	3.5%
Mortgages	0.3%
Mortgage-backed securities	9.2%

SAN FRANCISCO — The City & County of San Francisco Employees Retirement System had $3.189 billion in total employee benefit assets as of Sept. 30, an increase of 17.1% from $2.723 billion the previous year.

However, between Sept. 30 and Nov. 1, the assets for the plan declined 6.8% to $2.972 billion as a result of the turmoil in the stock market during October. The asset mix Nov. 1 was 31.6% stocks, 49.7% bonds, 4% cash equivalents, 3.8% real estate equity, 0.3% mortgages and 10.6% mortgage-backed securities.

Equity managers: (Domestic) Fred Alger; Axe Core; Furman Selz; Hahn Holland & Grossman; Hanson Investment; Loomis, Sayles; McCullough, Andrews & Cappiello; Nicholas-Applegate; and George B. Springman. (International) Capital Guardian; Morgan Grenfell; and Oechsle.

Fixed-income managers: (Domestic) Bankers Trust; Lehman; MacKay-Shields; and Scudder, Stevens & Clark. (International) First Chicago and Warburg.

Real estate manager: Coldwell Banker.

The master custodian is Bankers Trust; the investment consultants are Callan Associates and Pension Realty Advisors.

Key personnel overseeing the investment management of the fund are DeWitt Bowman, chief investment officer, and Carolyn Hamilton, assistant chief of investments.

Sears, Roebuck & Co.

	($ millions)
Total assets	8,225
Defined benefit	2,958
Profit-sharing/401(k)	5,267
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	1,649
Fixed income	766
Short term	176
Other	71
Passive investments:	
Indexed stocks	923
Alternative investments:	
International equities	248
Venture capital	75
Real estate equity	12
Mortgages	36
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	58%
Bonds	26%
Cash equivalents	6%
Mortgages	2%
International	8%

CHICAGO — Employee benefit assets of Sears, Roebuck & Co. increased 21.2% to $8.225 billion as of Sept. 30 f[illegible] $6.784 billion in December 1986. [illegible]ned benefit assets alone increased 18.7% during the 12 months, to $2.958 billion from $2.492 billion.

Equity managers (Domestic): Sears Investment Management.

(International): Capital Guardian and Fidelity International.

Fixed-income manager: Sears Investment Management.

Real estate manager: Aldrich, Eastman & Waltch.

The master trustee is Continental Illinois.

The key person overseeing investment management of the fund is David V. Dootson, president of Sears Investment Management.

Shell Oil Co.

	($ millions)
Total assets	6,918
Defined benefit	3,307
Defined contribution	3,380
401(k)	231
Employer contributions	160
Benefit payments	266
Portfolio insurance	100
In-house assets:	
Equities	276
Fixed income	876
Short term	179
Passive investments:	
Indexed stocks	790
Indexed bonds	20
GICs	70
Alternative investments:	
Real estate equity	300
Mortgage-backed securities	189
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	60.7%
Bonds	18.5%
Cash equivalents	2.5%
Real estate equity	10.6%
Mortgage-backed securities	5.6%
GICs	2.1%

HOUSTON — Total employee benefit assets at Shell increased by 19% to $6.918 billion as of Sept. 30 from $5.811 billion in 1986.

Equity managers: Criterion; Dodge & Cox; Equitable; Kemper; Fayez Sarofim; and Wells Fargo.

Real estate managers: Aetna; Equitable; First National Bank of Chicago; John Hancock; Heitman; and Prudential.

The master custodian is Bankers Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are L.S. Chaikind, administrator; J.B. Kloehr, deputy administrator; R.J. Stapleton, manager-fixed income; K.T. Ng, manager-equities.

South Carolina Retirement System

	($ millions)
Total assets	5,171
Defined benefit	5,171
Employer contributions*	234
Benefit payments	216
In-house assets:	
Fixed income	4,639
Short term	532
Alternative investments:	
Mortgage-backed securities	993
Asset mix:	
Bonds	70.5%
Cash equivalents	10.3%
Mortgage-backed securities	19.2%

*as of June 30, 1987

COLUMBIA, S.C. — Total benefit assets at the South Carolina Retirement System increased 3.5% to $5.171 billion from $4.996 billion for the 18 months ended Sept. 30. All assets are managed in-house.

The investment consultant is Jamison, Eaton & Wood.

Key personnel overseeing the investment management of the fund are Grady L. Patterson Jr., state treasurer; Michael Windham, senior assistant state treasurer-investments; and Shakun Tahiliani, coordinator of technical services.

Annuity Board of the Southern Baptist Convention

	($ millions)
Total assets	2,061
Defined benefit	752
Defined contribution	1,309
Employer contributions	na
Benefit payments	56
Passive investments:	
GICs	661
Alternative investments:	
International equities	32
Real estate equity	29
Mortgages	28
Mortgage-backed securities	79
Hedging devices:	
Stock options	y
Asset mix:	
Stocks	29%
Bonds	23%
Cash equivalents	9%
Real estate equity	1.5%
Mortgages	1.5%
Mortgage-backed securities	4%
GICs	32%

DALLAS — Total benefit assets at the Southern Baptist Convention increased by 16.6% to $2.061 billion as of Sept. 30 from $1.767 billion in 1986. The fund has $762 million in internally managed defined benefit and defined contribution assets; fund officials declined to break out the defined benefit assets.

Equity managers: Alliance; Capital Guardian; Lazard Freres; Loomis, Sayles; Provident; Scudder, Stevens; Seligman; and Thorndike, Doran.

Fixed-income managers: Sanford C. Bernstein; MacKay-Shields; J.P. Morgan; Morgan Stanley; Standish, Ayer; STW; and Western Asset.

The master trustee is First Republic-Bank Dallas; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Harold D. Richardson, senior vice president; Dave L. Borders, vice president.

Southern California Edison

	($ millions)
Total assets	2,060
Defined benefit	1,299
401(k)	538
ESOP	223
Employer contributions	61
Benefit payments	52
Passive investments:	
GICs	100
Alternative investments:	
International equities	77
Venture capital	19
Real estate equity	19
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	55%
Bonds	25%
Cash equivalents	10%
Real estate equity	1%
GICs	8%
Other	1%

ROSEMEAD, Calif. — As of Sept. 30, Southern California Edison Co.'s total employee benefit assets increased 17.3% to $2.06 billion from $1.756 billion a year earlier. Defined benefit assets increased 26.5% during the same period, to $1.299 billion from $1.027 billion. Because of market volatility, defined benefit assets totaled $1.163 billion as Oct. 31, a drop of 10.5%. Total assets as of that date were not available.

Equity managers: Batterymarch; Mellon Fund; PFR; PIMCO; Rosenberg; and Wentworth.

Fixed-income managers: PIMCO and Rosenberg.

Real estate manager: Pacific Mutual Realty.

GIC managers: Connecticut Mutual; John Hancock; Massachusetts Mutual; Morley Capital; and Washington Square.

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Venture capital managers: Euclid Partners II; Institutional Venture Partners; TCW I and II; and Venturtech.

Cash managers: Payden & Rygel and Bankers Trust.

The master trustee is Security Pacific National Bank; the investment consultants are DeMarche Associates and Frank Russell.

Key personnel overseeing the investment management of the fund are Michael L. Noel, vice president and treasurer; Lois G. Ingham, manager-pension investments; and Rick A. Yamamoto, supervisor-pension investments.

Southern California UFCW Unions and Food Employers

	($ millions)
Total assets	1,463
Defined benefit	1,463
Employer contributions	96
Benefit payments	65
In-house assets:	
Short term	145
Passive investments:	
Indexed stocks	72
Alternative investments:	
Real estate equity	30
Mortgage-backed securities	13
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	50.1%
Bonds	24.1%
Cash equivalents	24.1%
Real estate equity	1.7%

CYPRESS, Calif. — Assets of the Southern California United Food & Commercial Workers & Food Employers Joint Pension Trust Fund increased 23.9% to $1.463 billion as of Sept. 30, from $1.181 billion a year earlier.

The fund declined 8.4% because of October's market turmoil, to roughly $1.34 billion as of Oct. 31. On Oct. 31, the asset mix was 43.2% equities, 32.6% bonds, 22.2% cash and 2% real estate equity.

Equity managers: Batterymarch; Cramblit & Carney; Lazard; Oppenheimer Capital; Siebel; and Wells Fargo.

Fixed-income managers: Robert C. Brown and PIMCO.

Real estate manager: McMorgan.

The master trustee is Bank of America.

The key person overseeing the investment management of the fund is P. Colleen Thompson, administrator.

The Southern Co.

	($ millions)
Total assets	2,550
Defined benefit	2,000
401(k)	550
Employer contributions	100
Benefit payments	44
Passive investments:	
GICs	30
Alternative investments:	
Real estate equity	10
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67%
Bonds	15%
Cash equivalents	15%
Real estate equity	1%
GICs	2%

ATLANTA — Total plan assets increased 23.8% to $2.55 billion from $2.06 billion during the year ended Sept. 30. During October, an estimated 15% of those gains were wiped out in the stock market crash. The effect of the crash on portfolio mix mirrored the effect on other plans: the stock portion decreased to 62%, bonds increased to 18%, and cash increased to 17%.

Equity managers: AmSouth Bank; INVESCO; Jundt/Capen; Lieber; Miller, Anderson & Sherrerd; Northern Capital; Spears, Benzak, Salomon & Farrell; and Strong/Corneliuson.

Fixed-income managers: Discount; FNB Atlanta; and Trusco.

The master trustee is Bankers Trust Co.

David Prince, assistant treasurer, oversees pension investments.

Southern New England Telephone Co.

	($ millions)
Total assets	1,700
Defined benefit	1,500
Defined contribution	200
Employer contributions	16
Benefit payments	48
Passive investments:	
Indexed stocks	665
Alternative investments:	
International equities	181
Private placements	28
Real estate equity	54
Mortgage-backed securities	8
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	75%
Bonds	19%
Cash equivalents	2%
Real estate equity	3%
Mortgage-backed securities	1%

NEW HAVEN, Conn. — The Southern New England Telephone Co. reported total assets of $1.7 billion as of Sept. 30, a 23.6% increase from the $1.375 billion reported a year earlier. Defined benefit assets alone rose 22.5% during the same period, to $1.5 billion fom $1.225 billion.

October market volatility caused total assets to drop 17.6% to to $1.45 billion. Asset allocation changes resulting from the volatility were: bonds to 25% from 19%; real estate to 4% from 3%, and stocks to 68% from 75%.

Equity managers: American Express Asset; Analytic Investment; Atalanta/Sosnoff; Barrow, Hanley, MeWhinney & Strauss; American National Bank, Chicago; Connecticut National Bank; Mercator; Moran; State Street Bank; Wellington/TDP&L; and Wells Fargo Investment.

Fixed-income managers: Connecticut National Bank; Dreyfus; Equitable; Putnam; and STW.

Real estate managers: CIGNA; JMB; LaSalle; and Security Capital.

The master trustee is Boston Safe Deposit.

Key personnel overseeing the investment management of the fund is John J. Miller, assistant secretary and assistant treasurer.

Southwestern Bell Corp.

	($ millions)
Total assets	7,231
Defined benefit	6,461
Defined contribution	770
Employer contributions	na
Benefit payments	240
Passive investments:	
Indexed stocks	2,227
Dedicated/immunized	1,762
Alternative investments:	
International equities	279
Venture capital	19
Oil and gas	40
Real estate equity	508
Asset mix:	
Stocks	62%
Bonds	27%
Real estate equity	8%
Oil and gas/venture capital	3%

ST. LOUIS — Southwestern Bell Corp.'s employee benefit assets rose 16.4% to $7.231 billion on Sept. 30, from $6.21 billion June 30, 1986.

Equity managers: (Domestic) First Republic; Franklin; Geo Capital; Jennison; Nicholas-Applegate; Pilgrim Baxter; Texas Commerce; Wells Fargo. (International) Fidelity; IDS, Nomura.

Fixed-income managers: Jennison; Mississippi Valley.

Real estate managers: Boston Co.; Heitman; JMB; McMahan; PSI; RREEF.

Venture capital managers: First Chicago; Crossroads.

Oil and gas manager: First Republic.

The master trustee is First Republic-Bank; the investment consultant is Buck Pension Fund Services.

Key personnel overseeing the investment management of the fund are Mary Ann Devine, district manager-pension investment and administration, and Charley Weaver, district manager-pension funds.

The Standard Oil Co.

	($ millions)
Total assets	1,946
Defined benefit	1,286
401(k)	660
Employer contributions	120
Benefit payments	100
In-house assets:	
Equities	200
Passive investments:	
Indexed stocks	378
Alternative investments:	
International equities	131
Venture capital	19
Real estate equity	73
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	65%
Bonds	20%
Cash equivalents	7%
Real estate equity	6%
Venture capital	2%

CLEVELAND — The Standard Oil Co.'s employee benefit assets rose 26.8% to $1.946 billion as of Sept. 30, 1986, from $1.535 billion on the same date a year earlier. Defined benefit assets alone grew 25.8% during the period, to $1.286 billion from $1.022 billion.

Equity managers: Jennison; MacKay-Shields; Manufacturers Hanover; Mellon Capital; National City Bank; Templeton; United Capital; and Value Line.

Fixed-income manager: Mellon Capital.

Real estate managers: First Chicago; John Hancock; Security Capital; and TCW.

The master trustee is Bankers Trust; the investment consultant is Frank Russell.

Key personnel overseeing investment management of the fund are E.J.P. Browne, executive vice president and chief financial officer; E.P. Campbell, vice president-finance; and D.J. Hamilton, director-pension investments.

Sun Co. Inc.

	($ millions)
Total assets	2,010
Defined benefit assets	1,600
Defined contribution	10
401(k)	400
Employer contributions	43
Benefit payments	163
Passive investments:	
Indexed stocks	54
Indexed bonds	214
GICs	51
Alternative investments:	
International equities	242
Real estate equity	178
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	49%
Bonds	29%
Cash equivalents	8%
Real estate equity	11%
GICs	3%

RADNOR, Pa. — Total benefit assets and pension assets increased 8.3% as of Sept. 30, to $2.01 billion from $1.856 billion a year earlier. Defined benefit assets alone increased 6.7% to $1.6 billion from $1.499 billion. After October's market turmoil, assets totaled $1.51 billion, a drop of 24.9%. The post-Oct. 19 asset mix was 44% equities; 30% bonds; 11% cash; 12% real estate; and 3% GICs.

Equity managers: (Domestic) Analytic Investment; Sanford Bernstein; Hellman, Jordan; Jennison; and Miller, Anderson & Sherrerd.

(International): Capital Guardian; Fidelity International; J.P. Morgan; Warburg; and Wells Fargo.

Fixed-income managers: Sanford C. Bernstein; Miller, Anderson & Sherrerd; and J.P. Morgan.

Real estate managers: Equitable and Prudential.

GIC manager: Aetna.

Short-term managers: Fischer, Francis, Trees & Watts and Bankers Trust.

The master trustee is Bankers Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are R.L. Veith, manager-benefit plans investments, and Susan S.F. Graef, portfolio specialist.

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Teachers Insurance and Annuity Association — College Retirement Equities Fund

	($ millions)
Total assets	66,171
Defined contribution	66,171
Employer contributions	2,800
Benefit payments	1,100
In-house assets:	
Equities	32,921
Fixed income	28,742
Short term	2,065
Other	2,443
Passive investments:	
Indexed stocks	20,771
Alternative investments:	
International equities	3,131
International bonds	100
Oil and gas	600
LBOs	600
Private placements	7,500
Real estate equity	1,628
Mortgages	13,486
Mortgage-backed securities	1,000
Asset mix:	
Stocks	49.7%
Bonds	21.3%
Cash equivalents	3.1%
Real estate equity	2.4%
Mortgages	20.4%
Mortgage-backed securities	1.5%
Other	1.6%

NEW YORK — TIAA-CREF's pension assets increased 26.5% to $66.171 billion from $52.3 billion during the 12-month period ended Sept. 30, 1987.

Assets declined 9.3% to $60 billion during the month of October.

The custodians for TIAA are Morgan Guaranty and Citibank; and for CREF, Bankers Trust and Chase Manhattan.

Key personnel overseeing the investment management of TIAA are J Daniel Lee Jr., executive vice president, TIAA Investments; David B. Bullett, senior vice president, TIAA Securities; and John A. Somers, senior vice president, TIAA Mortgages & Real Estate.

Overseeing CREF investments are James S. Martin, executive vice president, CREF Investments; C. Oscar Morong, senior vice president, CREF Security Research; and Virgil H. Cumming, vice president, international investments.

Teamsters, Central States, Southeast & Southwest Areas Pension Fund

	($ millions)
Total assets	8,482
Defined benefit	8,482
Employer contributions	760
Benefit payments	834
In-house assets:	

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Short term	75
Passive investments:	
Indexed stocks	2,700
Indexed bonds	2,489
Alternative investments:	
Private placements	349
Real estate equity	21
Mortgages	31
Mortgage-backed securities	1,306
Asset mix:	
Stocks	43.5%
Bonds	37%
Cash equivalents	3.5%
Real estate equity	0.2%
Mortgages	0.3%
Mortgage-backed securities	15.4%
Other	0.1%

CHICAGO — The Teamsters, Central States, Southeast & Southwest Areas Pension Fund recorded a 20% growth in its employee benefit assets in the year ended Sept. 30, to $8.482 billion from $7.07 billion.

During Black October, the fund's assets dropped 8.7% to $7.74 billion as of Oct. 31. In that month, the fund's equities fell 19% to $2.98 billion from $3.68 billion, while its fixed income (including mortgage-backed securities but excluding cash equivalents) rose 2.5% to $4.56 billion from $4.45 billion. As of the end of October, the fund's equity allocation was down to 38.4% and its fixed-income allocation was 59%.

The fund is run externally by managers selected by its named fiduciary, Morgan Stanley, except for $75.1 million the Teamsters, Central States staff runs in cash equivalents.

Equity managers: BEA; Equitable; INVESCO; Mellon Capital; and Wells Fargo Bank.

Fixed-income managers: Bankers Trust; Fiduciary Trust; Lincoln Capital; MacKay-Shields; Mellon Bank; Miller Anderson & Sherrerd; T. Rowe Price; and Putnam Advisory.

Real estate managers: Eastdil and Karsten.

The master custodian is Mellon.

Morgan Stanley as named fiduciary is responsible for investment policy. The key person at Central States overseeing the fund is George Lehr, its executive director.

Teamsters, New England Trucking Locals

	($ millions)
Total assets*	1,392
Defined benefit	1,392
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

BOSTON — Employee benefit assets of the Teamsters, New England Trucking Locals increased 10% to $1.392 billion as of Sept. 30 from $1.265 billion a year earlier, according to a *Pensions & Investment Age* estimate.

Investment manager: Laidlaw Capital.

Key personnel overseeing the investment management of the fund are Helen Debreceni, pension fund manager, and Charles Langone, assistant fund manager.

Western Conference of Teamsters Pension Trust

	($ millions)
Total assets*	7,524
Defined benefit	7,524
Employer contributions	480
Benefit payments	540

*as of Aug. 31, 1987

Passive investments:	
Indexed stocks	760
Indexed bonds	376
Dedicated/immunized	5,530
Alternative investments:	
Real estate equity	640
Mortgages	151
Asset mix:	
Stocks	11.4%
Bonds	55.9%
Cash equivalents	0.2%
Real estate equity	8.5%
Mortgages	2%
Annuities	22%

SEATTLE — The Western Conference of Teamsters Pension Trust's employee benefit assets declined 0.6% to $7.524 billion as of Aug. 31, 1987, from $7.571 billion a year earlier. Because of the market turmoil during October, the asset value as of Oct. 31, was $7.424 billion, a decline of 1.3%.

Equity managers: Fidelity; Prudential; and Wells Fargo.

Fixed-income manager: Prudential.

Real estate manager: Prudential.

The master custodian is Boston Safe; the investment consultant is Alan D. Biller & Associates.

Key personnel overseeing the investment management of the fund are John Bacon, chairman of the investment committee; and Joseph Ballew and Owen Bennett, co-chairmen of the trust.

Teledyne Inc.

	($ millions)
Total assets*	1,267
Defined benefit assets	1,267
Employer contributions	na
Benefit payments	na

**P&I Age* estimate

In-house assets:	
Fixed income	1,253
Short term	14
Asset mix:	
Bonds	99%
Cash	1%

LOS ANGELES — Teledyne Inc. had $1.267 billion in total employee benefit assets as of Sept. 30, according to a *Pensions & Investment Age* estimate.

All assets are managed in-house.

The master custodian is First RepublicBank.

Key personnel overseeing the investment management of the fund are H.E. Singleton, chairman of the board; C.E. Rinseh, vice president, secretary and treasurer; and B.J. Baker, assistant to the president.

Tenneco Inc.

	($ millions)
Total assets	2,635
Defined benefit	1,810
401(k)	750
ESOP	75
Employer contributions	80
Benefit payments	50

Passive investments:	
Indexed stocks	450
Indexed bonds	380
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	60%
Bonds	30%
Cash equivalents	10%

HOUSTON — The total employee benefit assets at Tenneco increased 35.8% to $2.635 billion as of Sept. 30, from $1.94 billion a year earlier. Defined benefit assets in that period rose 44%, to $1.81 billion from $1.256 billion. Because of the market turmoil during October, however, the defined benefit assets totaled $1.57 billion Nov. 1, a drop of 15.3%.

Equity managers: Sanford Bernstein; Capstone Asset Management; Delaware; Dimensional Fund; IDS; Pilgrim Baxter; and Fayez Sarofim.

Fixed-income managers: Bridge Capital; Capstone; First RepublicBank Dallas; Fisher Francis Trees & Watts; State Street Research; and STW.

The master trustee is First RepublicBank Dallas; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are K.W. Reese, executive vice president, and A.M. Stewart, pension investment officer.

Tennessee Consolidated Retirement System

	($ millions)
Total assets	6,132
Defined benefit assets	6,132
Employer contributions	170
Benefit payments	na

In-house assets:	
Equities	2,131
Fixed income	2,827
Short term	729
Other	445
Alternative investments:	
International equities	283
International bonds	162
Private placements	7
Mortgage-backed securities	300
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	34%
Bonds	42%
Cash equivalents	12%
Mortgage-backed securities	5%
International	7%

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NASHVILLE, Tenn. — Assets of the Tennessee Consolidated Retirement System increased 14.8% to $6.132 billion as of Sept. 30 from $5.34 billion the previous year. Because of the market turmoil in October, the fund dropped 5.7% to $5.782 billion.

The master custodian is Chase.

Key personnel overseeing the investment management of the fund are Charles A. Webb, chief investment officer, and Marshall Cox, fixed-income manager.

Tennessee Valley Authority

	($ millions)
Total assets	2,574
Defined benefit	2,461
Thrift or savings	113
Employer contributions	86
Benefit payments	64
Passive investments:	
Indexed stocks	403
Indexed bonds	70
GICs	83
Alternative investments:	
International bonds	51
Real estate equity	25
Asset mix:	
Stocks	41%
Bonds	42.3%
Real estate equity	1%
GICs	3.4%
Other	12.3%

KNOXVILLE, Tenn. — The Tennessee Valley Authority's total employee benefit assets increased 26.9% as of Sept. 30, to $2.574 billion from $2.028 billion a year earlier. During the same period, defined benefit assets rose 155%, to $2.461 billion from $964 million.

Because of the market turmoil during October, defined benefit assets fell 11%, to $2.19 billion as of Oct. 31.

Equity managers: Aetna Capital; American National Bank/Chicago; Citibank; Lord, Abbett; and Paribas.

Bond managers: American National Bank & Trust; Bank of New York, Citibank; Commerce Union Bank/Nashville; DFG; First American Bank/Nashville; First American National/Knoxville; Third National Bank/Nashville; and U.S. Trust.

Real estate manager: Citibank.

The investment consultant is Wilshire.

Key personnel overseeing investment management of the fund are Dale H. Kangas, executive secretary, TVA Retirement System; L.H. Edwards, chairman-board of directors; and R.L. Yates, chairman-investment committee.

Texaco Inc.

	($ millions)
Total assets	2,400
Defined benefit assets	1,500
Thrift or savings/401(k)	900
Employer contributions	na
Benefit payments	na

WHITE PLAINS, N.Y. — Texaco's pension assets increased 8.2% to $2.4 billion Sept. 30, from $2.219 billion the year before. Defined benefit assets increased 17.7% during the same period, to $1.5 billion from $1.274 billion.

The company declined to disclose any further information.

The master trustee is Chase Manhattan Bank.

Michael V. Carlucci, assistant treasurer, oversees investment management of the funds.

Texas County & District Retirement System

	($ millions)
Total assets	1,500
Defined contribution	1,500
Employer contributions	60
Benefit payments	42
In-house assets:	
Fixed income	1,470
Short term	30
Alternative investments:	
Mortgage-backed securities	566
Asset mix:	
Bonds	63%
Mortgage-backed securities	37%

AUSTIN, Texas — As of Sept. 30, the Texas County & District Retirement System's benefit assets increased 18% to $1.5 billion from $1.271 billion a year earlier.

J. Robert Brown, executive director, oversees the investment management of the fund.

Employees Retirement System of Texas

	($ millions)
Total assets*	4,792
Defined benefit	4,792
Employer contributions	159
Benefit payments	154
In-house assets:	
Equities	1,166
Fixed income	3,461
Other	165
Passive investments:	
Indexed stocks	175
Alternative investments:	
Mortgage-backed securities	471
Asset mix:	
Stocks	24.3%
Bonds	62.4%
Cash equivalents	3.5%
Mortgage-backed securities	9.8%

*as of Aug. 31, 1987

AUSTIN, Texas — Total assets of the Employees Retirement System of Texas increased 11.2% for the 12 months ended Aug. 31, to $4.792 billion from $4.31 billion. Because of the market turmoil, total assets slipped 8% to $4.4 billion Nov. 1.

Equity adviser: INVESCO.

Fixed-income adviser: Duff & Phelps.

The master custodian is the state treasurer; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Clayton T. Garrison, executive director; Nancy G. Goerdel, deputy director for investments; and Stephen Arnold, assistant investment officer.

Texas Municipal Retirement System

	($ millions)
Total assets	1,600
Defined contribution	1,600
Employer contributions	na
Benefit payments	na
In-house assets:	
Fixed income	1,600
Asset mix:	
Bonds	100%

AUSTIN, Texas — The Texas Municipal Retirement System reported an 18.5% increase in total employee benefits as of Sept. 30, to $1.6 billion from $1.35 billion the previous year.

The master custodian is First City Bank of Austin; the investment consultant is Duff & Phelps.

Key personnel overseeing the investment management of the fund are Jimmie L. Mormon, director, and Preston G. Craig, investment officer.

Leasing: Oct. 3.

Teacher Retirement System of Texas

	($ millions)
Total assets	18,930
Defined benefit	18,930
Employer contributions	654
Benefit payments	841
In-house assets:	
Equities	7,970
Fixed income	8,802
Short term	738
Other	1,420
Alternative investments:	
Private placements	2,189
Mortgages	1,420
Mortgage-backed securities	1,393
Asset mix:	
Stocks	42.1%
Bonds	39.2%
Cash equivalents	3.9%
Mortgages	7.5%
Mortgage-backed securities	7.3%

AUSTIN, Texas — Total assets of the Teacher Retirement System of Texas increased 43.4% to $18.93 billion as of Sept. 30, from $13.198 billion the previous year. The assets are managed internally, with Thorndike, Doran, Paine & Lewis serving as adviser.

The custodian is the state treasurer.

Key personnel overseeing the investment management of the fund are Bruce Hineman, executive director; Joe Perrone, chief investment officer; Jack Cooper, assistant investment officer-fixed income; George Reagan, assistant investment officer-equities; and John Brown, assistant investment officer-real estate.

Textron Inc.

	($ millions)
Total assets	2,881
Defined benefit assets	2,200
Defined contribution	536
Profit-sharing	145
Employer contributions	na
Benefit payments	247
In-house assets:	
Equities	484
Fixed income	528
Short term	420
Other	202
Passive investments:	
GICs	40
Alternative investments:	
Oil and gas	25
LBOs	50
Private placements	75
Real estate equity	151
Asset mix:	
Stocks	40.1%
Bonds	26.2%
Cash equivalents	19.9%
Real estate equity	6.7%
GICs	1.8%
Other	5.3%

PROVIDENCE, R.I. — Total employee benefit assets at Textron increased 15.1% to $2.881 billion as of Sept. 30 from $2.502 billion a year earlier. Defined benefit assets alone increased 14% during the 12 months, to $2.2 billion from $1.93 billion.

Equity managers: Sanford Bernstein; Continental Illinois; Delaware Advisors; Textron Investment Management; Thorndike, Doran, Paine & Lewis; and Trinity.

Fixed-income managers: Alliance; Continental Illinois; National Bank of Detroit; and Textron Investment Management.

Real estate managers: Prudential and Textron Investment Management.

GIC manager: Metropolitan Life.

The master trustees are Bankers Trust and National Bank of Detroit.

Overseeing the investment management of the fund is Richard Watson, Textron vice president and president of Textron Investment Management Co.

Times Mirror Co.

	($ millions)
Total assets	1,354
Defined benefit assets	933
Profit-sharing	21
401(k)	150
ESOP	250
Employer contributions	31
Benefit payments	40
In-house assets:	
Equities	138
Passive investments:	
Indexed stocks	160
GICs	37
Alternative investments:	
Venture capital	3
Real estate equity	11
Mortgage-backed securities	50
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60.9%
Bonds	15.3%
Cash equivalents	1.8%
Real estate equity	1.2%
Mortgage-backed securities	5.4%
GICs	4%
Annuities	11.4%

LOS ANGELES — Total employee benefit assets at Times Mirror Co. increased 26.7% to $1.354 billion as of Sept. 30, from $1.069 billion the year before.

Because of the market turmoil during October, the fund had $1.16 billion in total assets Oct. 31, a drop of 14%. The asset mix as of Oct. 31 had shifted to 56% equities; 23% bonds (including mortgage-backed securities); 2% cash; 1% real estate equity; and 18% GICs and GACs.

Equity managers: Aetna; Bankers Trust; Sanford Bernstein; Cooke & Bieler; Denver Investment; First Pacific; First RepublicBank Dallas; and INVESCO.

Fixed-income managers: Bankers Trust; PIMCO; and Weiss, Peck & Greer.

Real estate manager: Aetna.

GIC/GAC managers: Aetna and Prudential.

Venture capital managers: Brentwood and Montgomery Securities.

The master trustee is Citibank.

Key personnel overseeing the investment management of the fund are R. David Kretschmer, manager-investment programs, and Joyce M. Fields, treasurer.

Trans World Airlines Inc.

	($ millions)
Total assets	2,571
Defined benefit	1,296
Defined contribution	1,195
Thrift or savings/401(k)	75
401(k)	5
Employer contributions	58
Benefit payments	145
In-house assets:	
Equities	390
Fixed income	113
Short term	19
Passive investments:	
GICs	151
Alternative investments:	
International bonds	20
Real estate equity	17
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	35%
Bonds	9%
Cash equivalents	9%
Real estate equity	1%
GICs	13%
IPG contract	33%

KANSAS CITY, Mo. — Trans World Airlines Inc.'s employee benefit assets increased 13.5% in the 12 months ended Sept. 30, to $2.571 billion from $2.265 billion. Defined benefit assets alone increased 18.5%, to $1.296 billion as of Sept. 30 from $1.094 billion a year earlier.

Equity managers: Dreyfus; Estabrook; Fidelity; Fort Hill; GAMCO; McGlinn; Mellon; J.P. Morgan; Putnam; Scudder, Stevens & Clark; Shields Asset; and State Street Research.

Fixed-income manager: J.P. Morgan.

Real estate managers: Aetna; Citicorp; Coldwell Banker; J.P. Morgan; NCNB; State Street Bank; and TCW.

GIC managers: Aetna; Capital Holdings; LICOVA; New England Life; and PRIMCO.

The master trustees are Boston Safe, Meridian Trust, Morgan Guaranty and Shawmut Bank.

The key person overseeing the investment management of the fund is Gary Dilley, director-pension finance.

Travelers Insurance Cos.

	($ millions)
Total assets	1,823
Defined benefit assets	1,377
Thrift or savings	304
401(k)	76
TESOP/IRA	66
Employer contributions	56
Benefit payments	55
In-house assets:	
Equities	495
Fixed income	172
Short term	78
Other	632
Passive investments:	
Indexed stocks	90
Alternative investments:	

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International equities	113
Private placements	35
Real estate equity	78
Mortgages	17
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	36%
Bonds	12%
Cash equivalents	6%
Real estate equity	6%
Mortgages	1%
Annuities	31%
International equities	8%

HARTFORD, Conn. — Total assets of The Travelers Insurance Cos. employee benefit plans increased 17.4% in the 12 months ended Sept. 30, to $1.823 billion from $1.553 billion. Defined benefit assets alone increased 18.8% during the period, to $1.377 billion from $1.159 billion a year earlier.

Equity managers: Travelers Investment Management and Dillon Read.

Fixed-income manager: Travelers Keystone.

Real estate manager: Travelers Real Estate.

The master trustee is Connecticut National Bank; the investment consultant is Travelers Investment Management.

Key personnel overseeing the investment management of the fund are Richard J. Shima and Thomas O. Thorsen, executive vice presidents of Travelers; David M. Dunford, president of Travelers Investment Management; and Kent A. Kelley, executive vice president of Travelers Investment Management.

TRW Inc.

	($ millions)
Total assets	2,228
Defined benefit	2,041
Defined contribution	187
Employer contributions	18
Benefit payments	108
In-house assets:	
Equities	68
Alternative investments:	
International equities	206
Venture capital	28
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	60%
Bonds	14.4%
Cash equivalents	24.6%
Venture capital	1%

CHAGRIN FALLS, Ohio — Assets of the TRW Inc. fund rose 11% in the year ended Sept. 30, to $2.228 billion from $2.005 billion. Defined benefit assets during the same period rose 11.3%, to $2.041 billion as of Sept. 30 from $1.834 billion the previous year.

During the market turmoil in October, the fund lost about 14.6%, or $300 million, but fund officials did not change the asset mix.

Equity managers (Domestic): Fred Alger; Alliance; Baring America; Campbell Advisors; Investment Counselors of Maryland; and Westwood Capital.

(International): Baring International and Ivory & Sime.

Fixed-income managers: Hoisington Investment Management; MacKay-Shields; and PIMCO.

The master trustee is Boston Safe Deposit.

Key personnel overseeing the investment management of the fund are Ted Button, president of TRW Investment Management, and Bob Hamje, vice president, of TRW Investment.

U

Union Carbide Corp.

	($ millions)
Total assets	1,663
Defined benefit	1,663
Employer contributions	0
Benefit payments	70
In-house assets:	
Equities	397
Fixed income	854
Short-term	57
Other	121
Passive investments:	
Indexed bonds	300
Alternative investments:	
Private placements	10
Real estate equity	45
Mortgages	102
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	28%
Bonds	58%
Cash equivalents	4%
Real estate equity	3%
Mortgages	5%
Annuities	2%

DANBURY, Conn. — Union Carbide Corp.'s defined benefit assets declined 42.3% to $1.663 billion as of Sept. 30 from $2.88 billion the year before. Total asset figures were not available.

The drop was due largely to the purchase of $1.2 million in annuities under a non-participating contract with Prudential Asset Management Co., according to a fund spokesman. Those assets previously had been in a participating annuity contract with Prudential, under which Union Carbide officials maintained management of the assets and the benefit fund received any returns above those needed to cover the annuities.

The pension assets declined 1.9% during October to $1.631 billion as of Oct. 31 from $1.663 billion Sept. 30. The asset mix as of Oct. 31 was stocks 20%; bonds 54%; real estate equity and mortgages combined 10%; and cash 16%.

Equity managers: Benefit Capital Management; Boston Co.; and Capital Guardian.

Fixed-income managers: Benefit Capital; Boston Co.; and Scudder, Stevens & Clark.

Real estate manager: Benefit Capital.

The master trustee is Manufacturers Hanover.

Key personnel overseeing the investment management of the fund are Michael F. Hoben, president of Benefit Capital Management Co., the company's in-house management operation; and Lawrence R. Fuller and Robert Borstein, vice presidents of Benefit Capital.

Unisys Corp.

	($ millions)
Total assets	4,691
Defined benefit	3,037
401(k)	1,654
Employer contributions	76
Passive investments:	
Indexed stocks	713
Dedicated/immunized	329
GICs	248
Alternative investments:	
International equities	173
Venture capital	33
Real estate equity	109
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	75%
Bonds	11%
Cash equivalents	1%
Real estate equity	4%
GICs	8%
Venture capital	1%

BLUE BELL, Pa. — Unisys Co.'s total benefit assets and pension assets grew 21% to $4.691 billion as of Sept. 30 from $3.88 billion in the previous year. Defined benefit assets alone grew 24.5%, to $3.037 billion from $2.44 billion the previous year.

Total assets after the market drop of October were $2.561 billion, a drop of 45.4%.

Equity managers: (Domestic) Fred Alger; Chase Investors; Concord Capital; Geewax Terker; Lazard Freres; Liberty Square; Mellon Capital; Nicholas-Applegate; NWQ Investment; Pacific Financial Research; PRIMECAP; Thomson, Horstmann & Bryant;

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and United Capital. (International) Mellon-Pictet; Mercator; Putnam; and Thorndike, Doran, Paine & Lewis.

Fixed-income managers: Harris Trust; M.D. Sass Investors; and Security Capital.

Venture capital manager: Abbott Capital.

Real estate managers: Chemical Bank; Coldwell Banker; JMB; LaSalle; National Bank of Detroit; and RCB.

The master trustee is Harris Trust; the investment consultant is Towers, Perrin, Forster & Crosby.

Key personnel overseeing the investment management of the fund are David A. White, corporate director; George F. Sprenkle, director-investment programs; and Charles A. Service, manager-investment programs.

General Board of Pensions for the United Methodist Church

	($ millions)
Total assets	2,957
Defined benefit	2,878
Defined contribution	79
Employer contributions	187
Benefit payments	117
In-house assets:	
Fixed income	285
Short term	111
Other	3
Passive investments:	
Indexed stocks	508
Dedicated/immunized	51
GICs	332
Alternative investments:	
Real estate equity	62
Mortgages	3
Mortgage-backed securities	64
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	60.7%
Bonds	14.7%
Cash equivalents	11.2%
Real estate equity	2%
Mortgages	0.2%
GICs	11.2%

EVANSTON, Ill. — The total benefit assets of the General Board of Pensions for the United Methodist Church increased 22.4% to $2.957 billion from $2.416 billion for the year ended Sept. 30. Assets fell 12% to $2.6 billion for the period Sept. 30 to Oct. 31. The asset mix Oct. 31 was 54.8% stocks, 17.9% bonds, 12.8% GICs, 12% cash equivalents, 2.3% real estate equity and 0.2% mortgages.

Equity managers: Alger; American National; Capital Guardian; Chase Investment; Delaware; Fidelity; INVESCO; McStay; Nicholas-Applegate; Olympic; Rosenberg; W.P. Stewart; Westwood; and Yeager, Wood & Marshall.

Fixed-income managers: American National; CIGNA; Criterion; Lincoln Capital; Stein Roe & Farnham; and STW.

Real estate managers: CIGNA and JMB.

The master custodian is Chase Manhattan; the investment consultant is Hotchkiss Associates.

Key personnel overseeing the investment management of the fund are James Parker, general secretary; F. Gale Witson-Schmidt, chief financial officer; and Diane Pinney, treasurer.

United Mine Workers of America Health & Retirement Funds

	($ millions)
Total assets	4,825
Defined benefit	4,825
Employer contributions	na
Benefit payments	na
In-house assets:	
Fixed income	418
Short term	36
Passive investments:	
Indexed stocks	455
Indexed bonds	418
Dedicated/immunized	1,636
Alternative investments:	
Real estate equity	168
Hedging devices:	
Stock options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	45%
Bonds	50%
Cash equivalents	1%
Real estate equity	4%

WASHINGTON — Total benefit assets of the UMWA Health & Retirement Funds as of Sept. 30 were up 14.3% to $4.825 billion from $4.223 billion a year earlier.

Because of market volatility during October, the assets totaled $4.474 billion Oct. 31, a drop of 7.3%. The asset allocation Oct. 31 was stocks, 40%; bonds, 51%; real estate equity, 4%; and cash equivalents, 5%.

Equity managers: Argus; Barrow, Hanley, Mewhinney & Strauss; Brignoli, Curley & Roberts; Concord; Denver; Dreman; Lazard Freres; Loomis Sayles; Wells Fargo; and Windsor Fund.

Fixed-income managers: Criterion; Loomis Sayles; J.P. Morgan; and STW.

Real estate managers: Goldman Sachs; Metropolitan Life; RREEF; State Street; and TCW.

The master custodian is Boston Safe.

Key personnel overseeing the investment management of the fund are Jerry N. Clark, executive director; Charles S. Stephens, director of investments and treasurer; and Terrence L. Bercini, assistant director of investments.

United Nations Joint Staff Pension Fund

	($ millions)
Total assets	7,428
Defined benefit	7,428
Employer contributions	320
Benefit payments	400
In-house assets:	
Equities	4,005
Fixed income	1,842
Short term	860
Alternative investments:	
International equities	2,070
International bonds	953
Other international	663
Real estate equity	721
Asset mix:	
Stocks	53.9%
Bonds	24.8%
Cash equivalents	11.6%
Real estate equity	9.7%

NEW YORK — Pension assets of the United Nations Staff Pension Fund rose 26.2% to $7.428 billion as of Sept. 30, from $5.884 billion a year earlier.

The market volatility, however, caused the fund to shrink 11.3% in the month of October, to $6.59 billion. As of Oct. 31, the asset mix had shifted to 46% stocks, 34% bonds, 9% cash and 11% real estate equity.

The fund participates in outside real estate vehicles, but declined to identify them.

The custodian is Fiduciary Trust Co. International, which also provides investment advice.

Key personnel overseeing the investment management of the fund are Pierre Henchoz, chief-investment management section; Henry Ouma, deputy chief; and Susan Farber, Mauricio Rezende, Dagmar Hesse-Kriendler and Fernando Torres-Torija, investment officers.

United Technologies Corp.

	($ millions)
Total assets	6,946
Defined benefit	5,495
Thrift or savings	1,451
Employer contributions	133
Benefit payments	256
Passive investments:	
Indexed stocks	370
Dedicated/immunized	60
Alternative investments:	
International equities	485
International bonds	284
Venture capital	54
Oil and gas	6
LBOs	79
Real estate equity	268
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	45%
Bonds	18%
Cash equivalents	7%
Real estate equity	4%
Annuities	24%
Other	2%

HARTFORD, Conn. — Total benefit assets at United Technologies Corp. increased 13.7% to $6.946 billion as of Sept. 30 from $6.108 billion a year earlier. Defined benefit plan assets rose 15.5% in the same period, to $5.495 billion from $4.758 billion.

Equity managers (Domestic): Ardsley Partners; Bankers Trust; Sanford Bernstein; Citibank; Fidelity Management Trust; Jennison; Lehman; Matrix Capital; Miller, Anderson & Sherrerd; Nicholas-Applegate; TCW; Trinity; Value Line; and Wright Investors.

(International): ABD International; Arnhold & S. Bleichroeder; Chase Investors; PCM International; Schroder; State Street; and Swiss Bank Corp.

Fixed-income managers (Domestic): CIGNA; Delaware; W.R. Huff; Jennison; Loomis Sayles; MacKay-Shields; and Neuberger & Berman.

(International): First Chicago and N.M. Rothschild.

Real estate managers: Aetna; Boston Co.; CIGNA; Lehndorff & Babson.

Venture capital manager: Manufacturer's Hanover; various partnerships.

The master trustee is Citibank; the investment consultant is Frank Russell.

The key person overseeing the investment management of the fund is Frances M. Crimbly, director-pension investments.

Unocal Corp.

	($ millions)
Total assets	1,405
Defined benefit	965
Profit-sharing/401k	440
Employer contributions	10
Benefit payments	60
In-house assets:	
Short term	100
Alternative investments:	
International equity	75
Venture capital	7
Asset mix:	
Stocks	53%
Bonds	6%
Cash equivalents	24%
Annuities	17%

LOS ANGELES — Unocal Corp. had $1.405 billion in total employee benefit assets as of Sept. 30, an increase of 16.4% from $1.207 billion the previous years. Defined benefit assets increased 13.1% in the same period, to $965 million from $853 million a year earlier.

Equity managers: Cooke & Bieler; Martin Currie; Delaware Investment; Hellman Jordan; IDS Advisory; Lincoln Capital; and Trinity.

Fixed-income managers: Criterion and Hoisington.

The master trustee is Northern Trust; the investment consultant is Frank Russell.

Gene Prochnow, manager-benefit plan investments, oversees investment management of the fund.

U S WEST Inc.

	($ millions)
Total assets*	8,046
Defined benefit	7,094
Thrift or savings	816
ESOP	136
Employer contributions	110
Passive investments:	
Indexed	1,448
Alternative investments:	
International equities	885
Venture capital	161
Real estate equity	402
Asset mix:	
Stocks	44%
Bonds	30%
Cash equivalents	1%
Real estate equity	5%
Venture capital	2%
Indexed	18%

*From Money Market Directory

ENGLEWOOD, Colo. — U S WEST Inc.'s total employee benefit assets rose 9.5% to just more than $8 billion as of June 30 from almost $7.35 billion as of Sept. 30, 1986, according to the Money Market Directory, which supplied the most recent statistics and listing of managers. Defined benefit assets rose 11.7%, to $7.094 billion from $6.35 billion during the same period.

Equity managers: (Domestic) Brignoli, Curley & Roberts; Concord Capital; Denver Investment Advisors; First Chicago Investment; David J. Greene; Moran Asset; PRIMECAP; and Fayez Sarofim. (International): Morgan Stanley and National Investment Services of America.

Fixed-income managers: Jennison.

Short-term manager: Payden & Rygel.

Real estate managers: Copley; Jones Lang Wootton; LaSalle; Security Capital; and TCW.

Venture capital manager: Citicorp.

Other managers: Capital Guardian; First Manhattan; Mellon Capital; Trinity Investment; and Wells Fargo Investment.

The master trustee is Boston Safe Deposit.

Key personnel overseeing the investment management of the fund are James J. Biundo, trust investment management and assistant treasurer, and James R. Belquist, director-trust investment management.

USX Corp.

	($ millions)
Total assets	10,150
Defined benefit	9,800
Thrift or savings	300
401(k)	50
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	5,880
Fixed income	2,940
Short term	980
Alternative investments:	
International equities	200
Oil and gas	25
Private placements	300
Real estate equity	200
Mortgages	50
Mortgage-backed securities	400
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60
Bonds	30%
Cash equivalents	10%

NEW YORK — The USX Corp. pension fund increased 8% to $10.15 billion Sept. 30 from $9.4 billion a year earlier. Defined benefit assets increased 8.9% to $9.8 billion from $9 billion during the same period.

U.S. Trust, Morgan Guaranty and Chase Manhattan serve as custodians for the fund.

Key personnel overseeing the investment management of the fund are Gary A. Glynn, president of the U.S. Steel and Carnegie Pension Fund, John Van Deusen, senior vice president, and Peter C. Lincoln, vice president-investments.

Utah State Retirement Fund

	($ millions)
Total assets	3,246
Defined benefit	3,246
Employer contributions	85
Benefit payments	65
In-house assets:	
Equities	800
Fixed income	1,100
Other	100
Passive investments:	
Indexed stocks	500
Alternative investments:	
International equities	42
Venture capital	15
Real estate equity	230
Mortgages	20
Mortgage-backed securities	90
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	46%
Bonds	32%
Cash equivalents	11%
Real estate equity	7%
Mortgages	1%
Mortgage-backed securities	3%

SALT LAKE CITY — Total employee benefit assets at the Utah State Retirement Fund increased 20.8% to $3.246 billion as of Sept. 30, from $2.688 billion the previous year. Because of the market volatility during October, assets totaled $3.1 billion as of Nov. 1, a drop of 4.5%.

Equity managers: Atalanta/Sosnoff; Smoot Miller & Cheney; Value Line; and Wasatch.

Real estate manager: F.I.A.

The master custodian is Chemical Bank; the investment consultant is Mercer-Meidinger-Hansen.

Key personnel overseeing the investment management of the fund are W. Dan Smith, investment officer, and Richard Cherry, assistant investment officer.

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V

Virginia Supplemental Retirement Systems

	($ millions)
Total assets	7,610
Defined benefit	7,610
Employer contributions	613
Benefit payments	278
Portfolio insurance	1,521
In-house assets:	
Equities	730
Short term	755
Other	11
Passive investments:	
Indexed stocks	2,343
Indexed bonds	193
Alternative investments:	
Real estate equity	238
Mortgages	51
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	59.2%
Bonds	26.9%
Cash equivalents	9.9%
Real estate equity	3.8%
Other	0.2%

RICHMOND, Va. — Benefit assets of the Virginia Supplemental Retirement System totaled $7.61 billion as of Sept. 30, a 20.9% increase from the $6.296 billion reported a year earlier.

As a result of the market volatility and other factors, assets as of Oct. 31 totaled $6.88 billion, a drop of 9.6%.

Equity managers: Ardsley Partners; Bankers Trust; Brignoli Curley & Roberts; Concord; Corinthian; DCM; Delaware Investment; Fidelity Management Trust; GAMCO; Hutson; IDS Advisory; Jundt/Capen; Lincoln; Loomis Sayles; McKenzie Walker; Mellon; Miller Anderson & Sherrerd; Nicholas-Applegate; Pacific Financial Research; Rosenberg Institutional; Schafer; and Donald Smith.

Fixed-income managers: Sanford C. Bernstein; Lehman Management; MacKay-Shields; Massachusetts Financial; Merganser; Security Capital; and Sovran Capital.

Real estate managers: Equitable Life; Equitable Real Estate; LaSalle; J.P. Morgan; New England Life; Phoenix Mutual; Prudential; and RREEF.

The master custodian is Sovran Bank; the investment consultants are Rogers, Casey & Barksdale and Wilshire.

The key person overseeing the investment management of the fund is Timothy R. Barron, director of investments.

W

Washington State Investment Board

	($ millions)
Total assets	10,600
Defined benefit	10,600
Employer contributions	370
Benefit payments	494
In-house assets:	
Fixed income	4,900
Short term	2,700
Passive investments:	
Indexed stocks	2,522
Indexed bonds	1,470
Alternative investments:	
Venture capital	210
Oil and gas	100
LBOs	990
Real estate equity	340
Mortgages	196
Mortgage-backed securities	na
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	26.8%
Bonds	46%
Cash equivalents	24%
Real estate equity	3.2%

OLYMPIA, Wash. — The Washington State Investment Board had $10.6 billion in total assets as of Sept. 30, an increase of 30.9% from $8.1 billion the previous year. Because of a reduction in equity assets to 27% in early September, the board reported only an 8.5% loss from October's volatile stock

Bond portfolios

Continued from page 13

banner year in 1987," Mr. Leibowitz said, although statistics on its growth were not available.

Joseph Gorman, president of National Investment Services of America Inc., Milwaukee, said plan executives' increasingly conservative posture is pushing them toward dedications.

But Ken Meyer, executive vice president of Lincoln Capital Management Co., Chicago, said pension executives largely were thinking through the implications of FASB 87 last year, and soon would make a move toward "structured" bond portfolios, such as dollar-duration matching vehicles, which use smaller amounts of more highly levered bonds to insulate against interest rate risk.

American Airlines, Fort Worth, Texas, adopted such an approach last year, dropping its $1.05 billion dedicated portfolio and buying $850 million in longer duration bonds, allowing the company to lock in its pension surplus and minimizing interest rate risks (*P&I Age*, March 9).

Besides American, at least three major dedicated bond portfolios were dropped during 1987. In one of the biggest moves, Chrysler Corp., Detroit, liquidated its $2.1 billion dedicated bond portfolio, shifting the assets to stocks. Before the October crash, however, Chrysler lowered its commitment to stocks to between 30% and 35% from 55%, boosting cash to 30%, said Russ Flynn, manager-pension fund investments.

In addition, Ford Motor Co., Dearborn, Mich., and Honeywell Inc., Minneapolis, unwound their dedicated portfolios that were valued at $400 million and $308 million respectively as of Sept. 30, 1986. Officials at those firms declined to discuss the portfolio liquidations.

The amount of assets held by Top 200 pension funds invested in dedicated or immunized portfolios actually declined in the year ended Sept. 30, slipping to $24.58 billion from $29.35 billion. But this year's data is skewed because several funds with large dedicated bond funds — such as U S WEST Inc. and Westinghouse Electric Corp. — did not supply data on whether those portfolios still are in place. ■

Dedicated or immunized bond funds among the Top 200
($ millions)

Fund	Assets
Western Conference of Teamsters	5,530
Ameritech	2,790
Minnesota State Board of Investment	2,560
Southwestern Bell	1,762
General Electric	1,700
UMWA Health & Retirement Funds	1,636
Navistar International	1,584
Bethlehem Steel	1,367
Caterpillar	1,004
American Airlines	750
RJR Nabisco	477
Armco	426
Inland Steel Industries	374
Mobil Oil	361
Unisys	329
Union Carbide	300
Raytheon	288
AT&T	266
Hercules	236
Ohio State Teachers Retirement System	200
Milwaukee City Employees' Retirement System	163
Boilermaker Blacksmith National Pension Trust	110
North American Philips	93
Eli Lilly	83
Bakery & Confectionery Union	80
United Technologies	60
United Methodist Church	51
Total	**24,580**

Rankings

Continued from page 13

Those in the top 10 funds were unchanged, although rankings shifted slightly. The Teachers Insurance and Annuity Association — College Retirement Equities Fund, New York, remained first with $66.2 billion; the California Public Employees' Retirement System, Sacramento, was second with $44 billion; General Motors Corp., New York, was third with $49 billion; and the New York State & Local Retirement Systems, Albany, remained fourth with $38.7 billion.

American Telephone & Telegraph Co., New York, with $37.5 billion, moved ahead of the $33.6 billion New York City Retirement Systems; General Electric Co., Stamford, Conn., $27.3 billion remained seventh; and the California State Teachers' Retirement System, Sacramento, $23.3 billion, just passed the New York State Teachers Retirement System, Albany, $23 billion, to rank eighth. IBM Corp., Stamford, Conn., $22.5 billion, remained 10th.

Significant shifts in overall rankings within the Top 200 include: Public School Teachers' Pension and Retirement Fund of Chicago, $3.2 billion, up 26 places to 83rd; The Dow Chemical Co., Midland, Mich., $2.9 billion, up 22 places to 98th; International Paper Co., New York, $2.5 billion, up 29 places to 123rd; and Abbott Laboratories, $1.7 billion, up 29 places to 163rd.

Bethlehem Steel Corp., Bethlehem, Pa., at $2.7 billion, slid 26 places in the rankings to 109th.

One of its woes was negative cash flow; incoming contributions to the plan were $150 million in 1987 while the amount to be paid to workers was $480 million. In addition, more than $150 million of total assets reflects corporate contributions owed to the plan. Bethlehem also maintains a very conservative asset mix, with half of all assets in dedicated bonds and only 35% in stocks as of Sept. 30.

Halliburton Co., Duncan, Okla., with $2 billion in total assets, moved up 56 places to 141st after incorporating the assets of two small subsidiaries — Houston-based Brown & Root Inc. and Highland Insurance Co. — into a master trust in 1987.

Union Carbide's ranking slipped 86 places to 164th, from $3.2 billion to $1.7 billion in total assets, because the assets of a previously terminated plan, which are still managed by Union Carbide, were not included in this year's profile. ■

Largest union funds
($ millions)

Fund	Assets
Teamsters, Central	8,482
Western Teamsters	7,524
UMWA	4,825
Nat'l Electrical Contractors	2,770
Boilermaker Blacksmith	2,230
Bakery & Confectionery	2,000
Hospital/Health Care	1,797
Int'l Operating Engineers	1,718
Plumbers, National	1,599
Southern California UFCW	1,463
IAM Nat'l Pension Fund	1,454
Teamsters, New England	1,392
TOTAL	**37,254**

market; it had $9.7 billion in assets Oct. 31.

Equity managers: Columbia; Hotchkis and Wiley; Mellon Capital; Schafer; Donald Smith; United; and Wells Fargo.

Real estate managers: Copley; Equitable; Pacific Mutual; RREEF; and Smith Barney.

The master custodian is Bank of New York; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are John Hitchman, director, and David Weig, deputy director.

Westinghouse

	($ millions)
Total assets*	4,976
Defined benefit assets	3,989
Thrift or savings	987
Employer contributions	na
Benefit payments	na

*From Money Market Directory

PITTSBURGH — Westinghouse Electric Corp.'s employee benefit assets rose 3.7% to $4.976 billion from $4.8 billion in the nine months ended June 30.

According to Money Market Directory, the managers are as follows:

Equity managers: Brandywine; Brignoli, Curley & Roberts Associates; Manufacturers Hanover Investment; Pittsburgh National Bank; Provident Capital; and Stralem & Co.

Fixed-income manager: MacKay-Shields; Pioneering; and Putnam.

Real estate managers: Citicorp; First Chicago; and Mellon.

The master trustee is Mellon Bank; the consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Thomas G. Scannell, director-pension investments; and Edward Goff, director-compensation, benefits and human resources programs.

State of Wisconsin Investment Board

	($ millions)
Total assets	15,632
Defined benefit	15,632
Employer contributions	345
Benefit payments	426
In-house assets:	
Equities	7,231
Fixed income	5,732
Short term	2,269
Real estate	400
Alternative investments:	
International equities	75
International bonds	75
Venture capital	35
LBOs	144
Private placements	2,379
Real estate equity	233
Mortgages	166
Mortgage-backed securities	544
Hedging devices:	
Bond options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	46%
Bonds	33%
Cash equivalents	15%
Real estate equity	1.5%
Mortgages	1%
Mortgage-backed securities	3.5%

MADISON, Wis. — The State of Wisconsin Investment Board's total employee benefit assets increased 15.8% to $15.632 billion from $13.5 billion during the 12 months ended Sept. 30.

Key personnel overseeing the investment management of the fund are Marshall Burkes, executive director, and Robert Zobel and James Severance, investment directors.

The World Bank

	($ millions)
Total assets	2,600
Defined benefit	2,600
Employer contributions	na
Benefit payments	na
Alternative investments*:	
International equities	600
International bonds	200
Venture capital	40
LBOs	40
Private placements	40
Real estate equity	80
Mortgage-backed securities	130
*P&I Age estimates	
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60%
Bonds	20%
Cash equivalents	8%
Real estate equity	3%
Mortgage-backed securities	5%
Other	4%

WASHINGTON — The World Bank's pension assets increased 18.2% to $2.6 billion as of Sept. 30 from $2.2 billion a year earlier.

According to the Money Market Directory, the fund's managers are as follows.

Managers: AIM; Delphi; Fischer, Francis, Trees & Watts; Geewax, Terker; Lincoln Capital; NCNB; Quest Advisory; and State Street Bank.

The master trustees are State Street and Northern Trust; the investment consultants are Strategic Investment Partners and Lewis, Bailey Associates.

Key personnel overseeing the investment management of the fund are Nestor Santiago, pension plan administrator; and Hilda Ochoa, president of Strategic Investment Partners.

Best-managed companies in America: May 2.

X

Xerox

	($ millions)
Total assets	2,734
Profit-sharing	2,734
Employer contributions	91
Benefit payments	294
Passive investments:	
GICs	427
International equities	268
Venture capital	10
Oil and gas	5
Private placement	10
Real estate equity	209
Mortgage-backed securities	14
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	55.2%
Bonds	6.2%
Cash equivalents	14.4%
Real estate equity	7.6%
Mortgage-backed securities	0.5%
GICs	15.6%
Other	0.5%

STAMFORD, Conn. — Xerox Corp.'s retirement plan assets increased 18% to $2.734 billion as of Sept. 30 from $2.318 billion a year earlier.

The corporation declined to disclose the names of its money managers.

The master trustee is State Street Bank and Trust. Frank Russell Co. and Collins Associates are the plan's consultants.

Key personnel overseeing the investment management of the fund are Robert R. Evans, assistant treasurer; Gerald J. Paolini, manager-trust investment strategy; Jainel Buell, manager-trust investments; and Debra L. Charlesworth, manager-trust analysis.

Investment management fees and revenues: March 7.

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REAL ESTATE

Funds bolster realty

By Steve Hemmerick

The largest 200 employee benefit funds reported holding $28.039 billion in equity real estate for the year ended Sept. 30, up about 7.1% from $26.181 billion reported the previous 12 months.

Most of the increase in equity real estate assets was reported by public pension funds.

Washington State Investment Board registered one of the biggest increases — 50.4% to $340 million from $226 million.

Top 200

John Hitchman, executive director of the Washington fund, said the increase comes from recent direct investments with "major developers" in office buildings, shopping centers and industrial properties. Some 134 of the largest 200 employee benefit funds have equity real estate portfolios, but 10 didn't list amounts.

Of the 124 reporting amounts, the average percentage of the total portfolio invested in equity real estate was 4.8%. The portfolios included equity purchases and participating mortgages, but not straight mortgages or mortgage-backed securities.

Of the total, corporate pension funds reported $12.041 billion in equity real estate; public pension funds, $11.769 billion; union funds, $1.332 billion; and miscellaneous funds, $2.897 billion.

The top four funds, with real estate holdings significantly larger than the other pension funds, reported the following increases: American Telephone & Telegraph Co., New York, reported $3.217 billion in equity real estate, a 20.1% increase over $2.678 billion; Teachers Insurance and Annuity Association College Retirement

Continued on page 76

Top 200 funds investing in real estate equity ($ mils.)

Fund	Assets
AT&T	3,217
California Public Employees'	2,241
TIAA-CREF	1,628
Ohio State Teachers	1,588
NYNEX	732
United Nations Joint Staff	721
Connecticut Trust Funds	709
Western Teamsters	640
California State Teachers	633
Florida State Board	550
Prudential Insurance	510
Pennsylvania Public School	508
Southwestern Bell	508
Exxon	427
US WEST	402
Eastman Kodak	400
Minnesota State Board	396
Pennsylvania State Employees'	392
Washington State Board	340
Ameritech	330
Colorado Public Employees'	330
Shell Oil	300
Oregon Public Employes	277
United Technologies	268
Ohio School Employees	262
Metropolitan Life	255
Allied-Signal	250
Illinois Teachers'	245
Virginia Supplemental	238
Wisconsin Investment Board	233
Utah State Retirement Fund	230
Nat'l Electrical Contractors	229
Illinois State Universities	225
Xerox	209
Allegis	200
Boilermaker Blacksmith	200
Monsanto	200
USX	200
Alaska State Retirement	196
Owens-Illinois	195
Caterpillar	194
Ohio Public Employees	192
Atlantic Richfield	190
Sun	178
Illinois State Board	175
UMWA	168
Pacific Gas and Electric	161
Digital Equipment	157
Iowa Public Employees	151
Textron	151
Kansas Public Employees'	149
New York State & Local	142
Illinois Municipal	138
Hawaii State Employees	135
Nevada Public Employees'	135
Honeywell	134
International Paper	133
Los Angeles County	130
Hercules	113
San Francisco Employees	113
Pension Reserves Investment	111
RJR Nabisco	110
Unisys	109
Minnesota Mining & Mfg.	108
Ohio Police & Firemen's	108
Amoco	102
Maryland State Retirement	100
Army and Air Force Exchange	97
Inland Steel Industries	97
Idaho Public Employee	93
Grumman	90
Michigan State	87
Chicago Municipal Employees	86
North American Philips	86
CIGNA	83
Kentucky Retirement Systems	82
World Bank	80
Aetna Life & Casualty	78
Travelers Insurance	78
Chrysler	77
Standard Oil	73
Dow Chemical	70
General Foods	70
K mart	69
American Stores	63
United Methodist Church	62
Goodyear Tire & Rubber	59
Merck	59
Bechtel Power	58
Pacific Lighting	58
E.I. du Pont de Nemours	55
S. New England Telephone	54
Detroit Retirement Systems	53
Eli Lilly	48
Union Carbide	45
IAM National Pension Fund	44
Houston City	43
New Mexico Public Employees	38
Kentucky Teachers' Retirement	37
Florida Power & Light	34
GTE	34
Halliburton	33
Massachusetts State Board	30
Raytheon	30
Southern California UFCW	30
Presbyterian Church (U.S.A.)	29
Southern Baptist Convention	29
Philadelphia Board of Pensions	27
Tennessee Valley Authority	25
Teamsters, Central States	21
New York State Teachers	20
Southern California Edison	19
Trans World Airlines	17
Milwaukee City Employees'	15
Sears, Roebuck	12
Armco	11
Times Mirror	11
Southern	10
American Electric Power	9
Philip Morris	8
Alabama Retirement System	4
Baltimore City	3
Georgia Employees'	2
Georgia Teachers	2
Episcopal Church	1
Aluminum Co. of America	NA
Deere	NA
Eastern Airlines	NA
General Motors	NA
Hughes Aircraft	NA
ITT	NA
New York Life	NA
North Carolina Retirement	NA
J.C. Penney	NA
TOTAL	**28,039**

WRAP-UP

First allocation made

CHICOPEE, Mass. — The $23 million Chicopee Contributory Retirement System, Chicopee, Mass., made its first real estate investment, allocating $750,000 to a Metropolitan Life Insurance Co., New York, real estate investment contract that guarantees protection of principal and at least a 7.5% annualized rate of return.

The allocation came from cash reserves. No consultant was used.

The fund might invest 5% to 10% of its total assets in real estate in the next several years, although no official allocation target has been set yet, said Norman Ritchott, system supervisor and board member. Any increase in real estate would come from equity investments, which are 35% of the fund's portfolio.

The Met Life contract was a "logical way" to enter real estate because it guarantees a minimum return and provides for greater returns, said Mr. Ritchott. The contract, which calls for investment in a group of pre-selected properties, guarantees investors a minimum return of 7.5% plus 90% of any returns the properties generate of more than 8.5%.

Consultant hired

JUNEAU, Alaska — The $9 billion Alaska Permanent Fund Corp., Juneau, has hired Institutional Property Consultants Inc.,

Continued on page 76

Second wave coming

Japanese look at new markets

Shuwa Investments Corp. bought the American Broadcasting Cos. building in New York during its first American buying spree, and now is looking to re-enter the U.S. market.

By Steve Hemmerick

Although Japanese investing in U.S. real estate has slowed, a second wave of Japanese purchases is expected to hit interior cities and suburbs where domestic investors have sought refuge from being outbid by the Japanese for properties in large, coastal cities.

Many Japanese investors have pulled back, waiting for stability between the yen and the dollar, evaluating the estimated $6 billion in American properties purchased in 1987 and, perhaps, becoming more price conscious.

But heavy buying is expected again, and this time the American vs. Japanese bidding for properties will accelerate in Chicago; Atlanta; Columbus, Ohio; Seattle; Phoenix; and San Francisco.

Some Japanese investors are waiting for the American dollar to fall to 100 to 110 yen vs. the dollar, said George Kikuta, a partner with Deloitte Haskins & Sells, Los Angeles, who does consulting and accounting work for Japanese firms.

He said the new wave of Japanese investors will include those from successful, non-public, family-run companies in Japan and rich individuals.

The expected broadening of the investment perspective is part of an evolutionary movement, said Robert T. Burke, a principal with AMB Investment Inc., San Francisco, and a consultant to Mitsui Fudosan.

Mr. Burke also noted the Japanese are more sophisticated, more cautious and less inclined to pay high prices.

With the Japanese moving beyond first-tier cities to secondary locations, non-trophy buildings and retail, the result might be lower yields and higher prices for prime real estate in second-tier cities and in suburbs of first-tier cities such as New York, Boston and Los Angeles.

American pensions funds, which Goldman, Sachs & Co. anticipates will invest $100 billion in equity real estate during the next few years, will be bidding for the highest quality real estate that is in short supply.

These American investors say they hope the Japanese will seek the same kinds of returns and drive as hard a bargain as they do.

Because of the dollar-yen impact, said Stephen Rosenthal, a vice president for acquisitions with F.I.A. Associates, Sacramento, Calif., Japanese real estate investors "could come back with a vengeance."

If the dollar begins to rise against the yen during that buying period, Japanese acquisitions could "accelerate," said David Shulman, a director of real estate research with Salomon Brothers Inc., New York.

Rather than buying into a depreciating dollar, which they have done, he said, they will be buying when their American investments rise in value on a currency basis.

When the dollar and yen stabilize, "you are going to see a flood of investment here in America," predicted John Allen, direc-

Continued on page 76

Japanese

Continued from page 75

tor of Asian marketing for the real estate services firm Grubb & Ellis, Irvine, Calif.

Blake Eagle, a consultant with Frank Russell Co., Tacoma, Wash., said information from his company's office in Japan indicates the Japanese will be significant long-term investors in U.S. real estate.

Some American institutional investors said they are trying to determine to what extent, if any, Japanese investors have slowed their investing.

As evidence of a slowdown, they point to reports that Shuwa Investments Corp., Los Angeles, had pulled out of negotiations to buy three office buildings in Chicago and one in Boston.

However, Shuwa has showed renewed interest in the real estate market, making the biggest bid for New York real estate since the October market decline.

Shuwa officials signed a letter of intent to acquire 575 Fifth Ave. for about $250 million.

Other Japanese investors reportedly backed off from bidding on the Beverly Hilton Hotel in Beverly Hills, Calif., and there was a perceived slowdown on Japanese investment in properties in New York, in part because of the instability in the securities industry.

"Yes, we are moving more cautiously than before," said an official at Sumitomo Bank and Trust Co. in New York, who gave his name as "Mr. Kumada."

After the currency exchange between the dollar and the yen has stabilized, it is likely Japanese investment "will be more active," he said.

Because of the volatile exchange rate, he said, Sumitomo officials only are discussing, but not acting on, possible U.S. buys, and will purchase mortgages.

He confirmed that Sumitomo is looking at properties in Chicago, San Francisco and Atlanta.

Robert Bannon, an economist with Security Pacific Bank, Los Angeles, who tracks Japanese stock and bond investments, said large Japanese companies or banks can "mechanically" invest in dollars.

Even so, he said, the Japanese at some point have to shift the value of the dollars back into yen and they can either lose or gain value by the currency shift. The "dollar means everything to them," he said.

While there will be new Japanese investors, others that have already invested here will stop, said Grubb & Ellis' Mr. Allen.

He said the Ministry of Finance in Japan has taken a more conservative stance at home on borrowing.

For example, he said, a company might have borrowed up to 75% on property it owns in Japan to invest here.

Because of sharply rising property values in Japan, that company could borrow again on the new value of property it owns for investment here, except for new Japanese pressures against such loans.

When the smaller, first-time investors in U.S. real estate begin investing, they will use Japanese trading companies and banks as intermediaries, said AMB's Mr. Burke.

Among the signs that the Japanese are becoming more interested in price: A spokesman in the New York office of Shuwa Investments said his firm can't find high-quality properties at the right price, yet some investors questioned Shuwa's purchase price of $625 million for the Arco Towers in Los Angeles in 1986.

The Shuwa spokesman also said his firm is willing to go "anyplace" in the United States to get an investment at the right price and is looking at properties in Chicago, San Francisco, Dallas and parts of Florida.

An official in the New York office of Nissei Realty said there is little to recommend to the home office in Japan because of high prices.

He said his firm is broadening its outlook, looking at properties in Chicago and Dallas. ■

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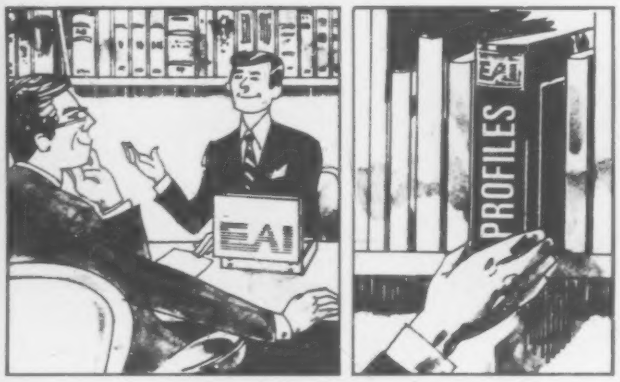

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Realty up

Continued from page 75

Equities Fund, New York, up 27.2% to $1.628 billion from $1.28 billion; the California Public Employees' Retirement System, Sacramento, Calif., up 10.7% to $2.241 billion from $2.025 billion; and Ohio Teachers' Retirement System, up 10.7% to $1.588 billion from $1.434 billion.

A key reason behind the ballooning of the AT&T equity real estate portfolio is its purchase of shares of the Telephone Real Estate Equity Trust from some regional telephone companies desiring to sell them.

The trust, originally valued at $4 billion, was established in January 1984 before the divestiture of the regionals from AT&T. Shares of the trust, which is scheduled to be liquidated after 10 years, can be bought or sold among the trust's membership.

Generally, corporate pension funds are not increasing the percentage of assets in equity real estate, said Blake Eagle, consultant at Frank Russell Co., Tacoma, Wash.

He said many of the large corporate pension funds already have real estate assets target goals of 10% to 15%, and were surprised how quickly they neared or reached those goals after the stock market fall Oct. 19.

He noted many pension funds participated in the buyout by JMB Realty, Chicago, of Cadillac Fairview Corp. Ltd., Toronto, and still show an appetite for quality real estate when it is available.

As for public pension funds, they continue to buy sizable amounts of real estate, according to Ronald Karp, president of Ronald A. Karp Associates, Summit, N.J.

He said he didn't notice an appreciable pull back in real estate purchases after the stock market slump, and public funds that have limitations on stock purchases use real estate as a hedge against inflation.

WRAP-UP

Continued from page 75

Atlanta, as real estate investment consultant, replacing Pension Realty Advisors, San Francisco.

It also appointed Pete Jeans as real estate investment officer replacing Richard Alexander, who retired.

The fund's board may increase its real estate allocation target to 10% from its current 6.5% during allocation strategy meetings scheduled for February, Mr. Jeans noted.

He also said the fund's board was pleased with Pension Realty Advisors, but decided it wanted "fresh blood" in consulting when the firm's three-year contract expired.

Mr. Jeans previously served as director of the about $150 million state loan programs administered by the Alaska Department of Commerce.

Blind pool withdrawn

ALEXANDRIA, Va. — Pension fund aversion to "blind pool" real estate investing forced the J.E. Robert Co., Alexandria, Va., to withdraw from the pension fund fund-raising market a closed-end limited partnership, according to Joseph E. Robert, chief financial officer.

The fund, called J.E.R. Partners, was expected to raise up to $200 million in pension fund investments but was withdrawn.

Mr. Robert said it was pulled back after executives of a "handful" of pension funds said they didn't like its blind pool approach.

No pension commitments had been made.

Blind pools select properties to acquire while they are still in or have already finished their fund raising.

Pre-selected property funds let investors know the properties the manager will acquire before investing.

Although there was always been some aversion to blind pool investing, real estate consultants have said that dislike has increased because of greater investor wariness after October's stock market fall.

They also said pension fund executives want to know what's in the real estate portfolios in which they invest.

J.E.R. Partners, which is underwritten by PaineWebber Inc., New York, will now seek investments from private investors, Mr. Robert said.

Top 200 funds investing in mortgages ($ mils.)

Fund	Assets
TIAA-CREF	13,486
New York State & Local	2,757
California Public Employees'	2,447
New York State Teachers	1,669
Texas Teachers	1,420
California State Teachers	1,115
Michigan State	1,003
Alabama Retirement System	968
Ohio State Teachers	920
Colorado Public Employees'	640
Pennsylvania State Employes'	484
Pennsylvania Public School	457
Oregon Public Employes	425
Hawaii State Employees	376
Detroit Retirement	375
Alaska State Retirement	265
Arizona State Retirement	229
Washington State Board	196
Los Angeles County	170
Wisconsin Investment Board	166
Funds	**Assets**
Western Teamsters	151
Nevada Public Employees'	134
Kentucky Teachers'	113
Int'l Operating Engineers	103
Union Carbide	102
Nat'l Electrical Contractors	100
Bakery & Confectionery	80
Ohio School Employees	76
New York City Retirement	72
Idaho Public Employee	70
Arkansas Teachers	67
Honeywell	60
Virginia Supplemental	51
Chicago Municipal Employees	50
USX	50
Goodyear Tire & Rubber	41
Sears, Roebuck	36
Teamsters, Central States	31
Southern Baptist Convention	28
Georgia Teachers	25
Funds	**Assets**
Halliburton	24
Atlantic Richfield	23
Baltimore City	23
Minnesota Mining & Mfg.	20
Utah State Retirement Fund	20
Aetna Life & Casualty	19
Travelers Insurance	17
Pacific Lighting	12
Ohio Police & Firemen's	10
San Francisco Employees	9
Georgia Employees'	8
New Mexico Public Employees	4
United Methodist Church	3
Chrysler	2
S. New England Telephone	1
Boeing	NA
Hewlett Packard	NA
Missouri School Retirement	NA
North Carolina Retirement	NA
Westinghouse Electric	NA
TOTAL	31,209

Energy ventures boom

Funds investing in oil and gas among the top 200 ($ millions)

Fund	Assets
TIAA-CREF	600
AT&T	236
Washington State Board	100
Minnesota State Board	63
Southwestern Bell	40
Allied-Signal	30
Exxon	29
GTE	29
Textron	25
USX	25
Caterpillar	18
Ford Motor	15
Honeywell	15
Eastern Air Lines	10
Merck	10
ITT	9
United Technologies	6
Atlantic Richfield	5
Maine State Retirement	5
Xerox	5
Pension Reserves Investment	3
Monsanto	NA
TOTAL	**1,278**

By Fred Williams

Top 200

For oil and gas investors among the largest 200 pension funds, the whole was greater than the parts in 1987.

Although individual companies reported only moderate changes in their direct investments in oil and gas programs, total investment by the nation's largest pension funds grew by half.

The total allocation by the 22 funds that reported direct oil and gas investment stood at $1.278 billion as of Sept. 30, an increase of 52.7% from $837 million as of Sept. 30, 1986. But an examination of the 15 funds that appeared on both last year's and this year's lists shows the total value of investments of eight of them decreased while others held steady or increased slightly.

One reason for the decrease could be a change in how the question was worded. The previous survey had asked for assets committed to the investments; this year's survey asked for assets invested.

Another reason is the market.

Bob Doyle, president of American Energy Reserve Consultants, Houston, said many funds might have taken a writedown in reserve valuations in 1987 reflecting devalued oil and gas properties.

"From 1986 to 1987 you lost a good $1 or $1.20 per thousand cubic feet of gas. In 1985, gas on the Gulf Coast spot market was averaging about $2.50 per (thousand cubic foot). In 1986, it hit a low of about $1.34. My guess is when you get into 1987, they revalued their reserves and came up with a different valuation for their holdings," he said.

Industry sources expect 1988 to be another flat year for energy prices because of soft worldwide demand and uncertainties surrounding the Organization of Petroleum Exporting Countries' pricing strength.

Natural gas prices, on the other hand, are expected to climb through the remainder of 1988 as surplus deliverability shrinks.

The high number of repeat investors on the charts reflect the long-term nature of energy investments.

One newcomer to the list of oil and gas investors is the $10.6 billion Washington State Investment Board, which placed $100 million in a limited partnership in June.

John Hitchman, executive director, said the board invested in the partnership deal developed by Robert Torray, who also is general partner and chairman. Mr. Torray is president and chief investment officer of Robert E. Torray & Co. Inc., an investment management firm in Bethesda, Md.

Called the Energy Recovery Fund, Mr. Hitchman said the focus of the partnership will be on "operating leverage and restructuring rather than on buying oil and gas in the ground." He said the seven-year partnership is expected to provide "superior" returns of between 2 and 2.5 times the returns of the Standard & Poor's 500 stock index.

Leading pension fund investors onto the oil field is the nation's largest fund, the more than $60 billion Teachers Insurance and Annuity Association — College Retirement Equities Fund. Although TIAA-CREF reported an $800 million investment in its survey response, a spokesman said that amount included more traditional fixed-income energy sector holdings. The spokesman estimated $600 million is invested in direct oil and gas programs.

Following TIAA-CREF, is American Telephone & Telegraph Co. AT&T, with an ongoing commitment to oil and gas investments, had been at the top of the list for the past several years, but dropped slightly to $236 million from $247 million a year earlier.

Most of the other companies have reported oil patch investments for several years, with their positions changing only slightly. ■

Budget law

Continued from page 2

companies willing to move into better funding status."

Trade groups representing the auto, steel and telephone industries, public utilities, manufacturers, and pension fund groups lobbied hard on Capitol Hill for the changes, according to congressional aides and trade group officials. Congressional aides heard from the Motor Vehicles Manufacturers Association, ERIC and the National Association of Manufacturers, all Washington-based, among others.

Navistar International Corp., Chicago, and Chrysler Corp., Highland Park, Mich., which are both MVMA members, were among the most vocal corporations. Both faced hard times several years ago when business slumped and, as a result, contributed little or nothing to their pension funds, leaving them underfunded. Recently, they have recovered and are able to resume making contributions or making larger ones. These kinds of companies will benefit most from the new provisions.

"This opens the way for companies with underfunded plans to fully fund their plans without penalty and get the deduction," said Daniel Clemens, director of Navistar's employee pensions.

He said Navistar's unfunded vested liability is about $360 million to $370 million, down from $1.1 billion a few years ago. Mr. Clemens is aiming to eliminate the unfunded liability in three to five years. He said the provisions would go a long way toward helping him accomplish that goal.

Last month, President Reagan signed the Omnibus Budget Reconciliation Law, which contained provisions tightening minimum and maximum funding rules, increasing the annual premium employers must pay to the Pension Benefit Guaranty Corp. and reducing the period over which past service liabilities and experience losses in pension funds can be amortized (*Pensions & Investment Age*, Dec. 28).

The combined effects of the two provisions specifically are targeted to companies with underfunded plans that have been making catch-up contributions so they contribute a large amount in one plan year. Lobbyists for several companies argued on Capitol Hill that if a corporate sponsor is willing to put more into the underfunded plan, Congress should make it easy to do so.

Under prior law, there was a limit to the amount a company could contribute in any given year, after which the contribution no longer would be deductible. But under the new law, a company can contribute up to the unfunded current liability without losing its tax deductions on that amount. Thus, the penalty that existed previously has been eliminated.

"But it still protects taxpayers from subsidizing companies' overfunding their plans because employers lose deductibility for contributions when funding exceeds current liability," Navistar's Mr. Clemens said.

The new variable-rate premium established for the PBGC in the law also is a factor. In general, under the new law a plan sponsor must pay a flat rate of $16 per participant per year, plus an additional $6 for each $1,000 of underfundedness to a $34 cap. That means the total premium could not be more than $50 a head in any given year.

If a company contributed more than the maximum in any plan year during the five years preceding its having to pay the variable premium, the variable portion of the PBGC premium it must pay is reduced to $3 participant. ■

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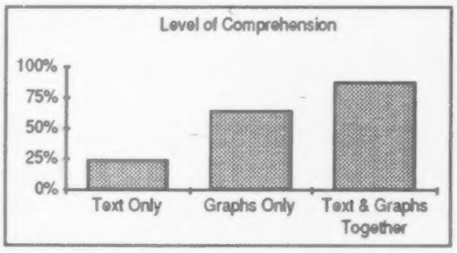

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The *P&I Age* monthly indexes track the changes in the Standard & Poor's 500, Frank Russell Co.'s Russell 3000 stock index, the Ryan Index of fixed-income securities, the Shearson Lehman Government/Corporate bond index and the Salomon Brothers Broad Investment Grade bond index.

P&I Age December indexes

	Latest mo.	Year to-date	Trailing 12 mos.
S&P 500	7.62	5.26	5.26
Russell 3000	7.56	2.51	2.51
Ryan Index	1.24	0.48	0.48
Shearson Lehman Gov't./Corp.	1.37	2.30	2.30
Salomon BIG	1.23	2.61	2.61

Source: Rogers, Casey and Barksdale Inc., and Frank Russell

The figure for the November return of the Russell 3000 in the Dec. 14 issue was incorrect. The number should have been −7.54.

Editorial Index

To obtain the editorial index for Pensions & Investment Age, please contact Debbie Spatafora at (313) 446-0492

Top funds

Continued from page 1

Following the performance of corporate employee benefit funds were public funds, up 18% to $514.4 billion from $435.9 billion; miscellaneous funds, rising 11.7% to $105 billion from $94 billion; and union funds, increasing 3.6% to $37.3 billion from $36 billion.

Although employer contributions, in the aggregate, declined 0.5% to $40.1 billion, from $40.3 billion, corporate funds accounted for most of the drop.

Benefits paid to retirees during the year totaled $38.2 billion, up 3.5% from $36.9 billion the previous year. A spate of staff reductions and early retirement programs in the corporate community generally slowed the growth of benefit payments.

Among the Top 200 employee benefit funds, defined benefit assets logged the biggest increase in assets, up 18.5% to $984.9 billion as of Sept. 30 from $831.1 billion a year earlier.

Thrift, saving and 401(k) plan assets showed the next largest increase, up 16.4% to $67.6 billion from $58.1 billion, followed by defined contribution plan assets, growing 13% to $104.2 billion from $92.2 billion, and profit-sharing plan assets, up 9.8% to $19.1 billion from $17.4 billion.

For the first time in 1987, *P&I Age* surveyed pension funds on the extent to which they use private placements as an investment. As of Sept. 30, 44 pension funds reported having $19.6 billion invested in private placements.

The number of pension funds among the Top 200 using bond index funds increased to 41 from 32, boosting the total assets invested in such funds 226.1% to $45 billion from $13.8 billion. Of the assets invested in bond index funds, $2.7 billion, or 6%, was managed internally.

The number of pension funds using stock index funds increased to 105 from 100 as of Sept. 30, increasing the total assets invested 29.8% to $141.3 billion from $108.9 billion. Of the $141.3 billion in stock index funds, $63 billion, or 44.6%, was run internally.

As of Sept. 30, 14 fewer pension funds, or a total of 48, were using GICs, decreasing the total assets invested that way 16.2% to $8.8 billion from $10.5 billion.

As of the same date, 10 fewer pension funds among the Top 200 reported using dedicated or immunized bond portfolios, lowering the total assets invested in these portfolios 16.3% to $24.6 billion from $29.4 billion. But several funds with large dedicated bond funds did not supply data on whether those portfolios are still in place (*See story on page 13*).

Among the various hedging strategies, nine more pension funds, or 72, reported using stock index futures during 1987 and three additional pension funds, or 65, used stock options. In contrast, three fewer pension funds reported using fixed-income options during 1987, for a total of 19; 46 funds used fixed-income futures.

Six fewer pension funds, or a total of 13, said they used portfolio insurance during 1987. The total assets covered by this strategy declined 15.1% to $7.3 billion as of Sept. 30, down from $8.6 billion a year earlier. ■

Largest miscellaneous funds ($ millions)

Fund	Assets
TIAA-CREF	66,171
University of California	11,228
United Nations Joint Staff	7,428
Illinois State Universities	3,016
United Methodist Church	2,957
World Bank	2,600
Tennessee Valley Authority	2,574
Presbyterian Church (U.S.A.)	2,122
Southern Baptist Convention	2,061
National Rural Electric	2,048
Episcopal Church	1,488
Army and Air Force Exchange	1,305
TOTAL	104,998

Largest defined benefit plans ($ millions)

Fund	Assets
California Public Employees'	44,036
New York State & Local	38,747
General Motors	34,900
New York City	32,104
AT&T	30,838
California State Teachers	23,714
New York State Teachers	23,035
General Electric	22,100
IBM	20,101
N.J. Div. of Investment	19,570
Texas Teachers	18,930
Michigan State	16,073
Ford Motor	15,700
Wisconsin Investment Board	15,632
Ohio Public Employees	14,985
Ohio State Teachers	14,821
Florida State Board	13,700
North Carolina Retirement	12,446
E.I. du Pont de Nemours	12,300
Pennsylvania Public School	12,021
NYNEX	11,966
Ameritech	11,157
Washington State Board	10,600
University of California	10,329
Bell Atlantic	9,974
TOTAL	489,779

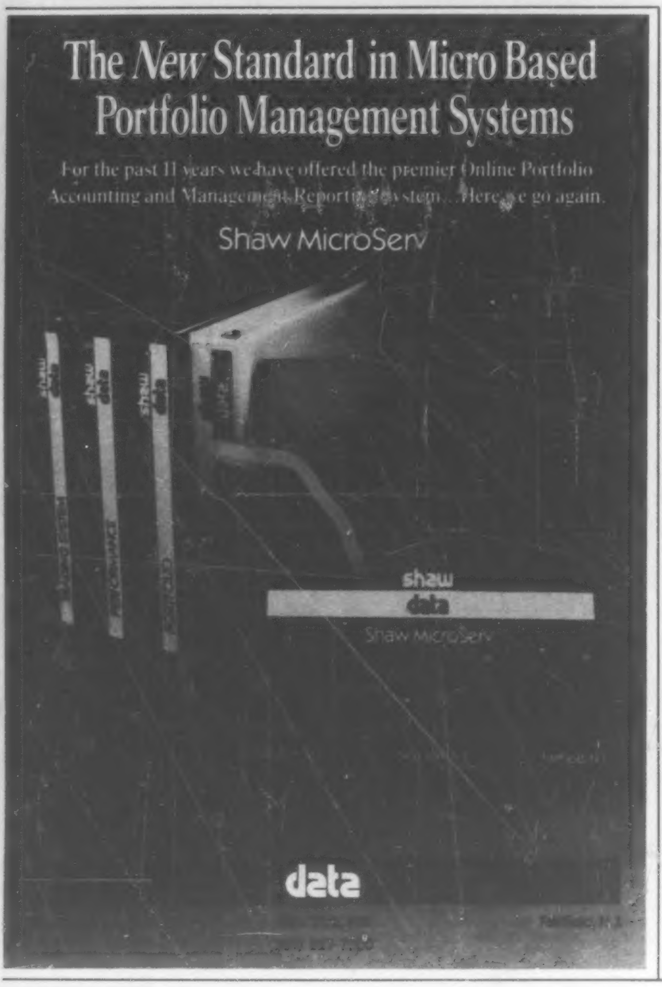
Largest defined contribution plans* ($ millions)

Firm	Assets
TIAA-CREF	66,200
AT&T	5,897
Sears, Roebuck	5,267
General Motors	4,900
General Electric	4,700
Lockheed	4,480
E.I. du Pont de Nemours	4,159
Exxon	3,933
Shell Oil	3,611
Procter & Gamble	3,411
Colorado Public Employees'	3,002
United Technologies	2,902
Xerox	2,734
NYNEX	2,370
Chevron	2,229
Boeing	2,166
Halliburton	2,023
Allied-Signal	2,000
Mobil Oil	1,900
Rockwell International	1,800
BellSouth	1,686
Eastman Kodak	1,621
Hughes Aircraft	1,600
Texas Municipal	1,600
J.C. Penney	1,584
TOTAL	137,775

* Includes profit-sharing, thrift/savings and 401(k) plans.

Funds investing in private placements among the Top 200 ($ millions)

Fund	Assets
TIAA-CREF	7,500
Wisconsin Investment Board	2,379
Teacher Retirement System of Texas	2,189
California Public Employees' Retirement System	1,000
Michigan State	1,000
Alabama Retirement System	939
AT&T	716
California State Teachers Retirement System	553
New York State Teachers Retirement System	373
Teamsters, Central States	349
Detroit Retirement Systems	343
USX	300
North Carolina Retirement Systems	286
Florida State Board of Administration	255
Honeywell	213
Minnesota Mining & Manufacturing	200
Georgia Teachers Retirement System	167
Goodyear Tire & Rubber	152
Colorado Public Employees' Retirement	150
Los Angeles County	143
Army and Air Force Exchange Service	123
San Francisco Employees Retirement System	86
Textron	75
New Jersey Division of Investment	50
Atlantic Richfield	49
World Bank	40
Travelers Insurance	35
Los Angeles Department of Water and Power	29
Maine State Retirement System	28
Southern New England Telephone	28
New Mexico Public Employees Retirement	23
Louisiana State Employees' Retirement System	18
Indiana Public Employees' Retirement Fund	15
E.I. du Pont de Nemours	13
Ohio State Teachers Retirement System	13
Armco	10
Union Carbide	10
Xerox	10
CIGNA	9
Idaho Public Employee Retirement System	9
Commonwealth Edison	7
Tennessee Consolidated Retirement System	7
Pension Reserves Investment Management Board	5
Chrysler	2
Ohio Police & Firemen's Disability & Pension	1
Total	19,902



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Venture capital holds on

Investments keep flowing at steady pace

By Trudy Ring

Venture capital investors among the nation's largest pension funds charted a steady course in 1987, but 1988 might hold some changes.

Top 200

The amount of assets, $2.91 billion, that the funds reported in venture capital was down 12.7% from 1986, but that appears to be a difference in reporting rather than an actual decrease in assets.

In 1987, funds were asked specifically for assets invested in venture capital; in 1986, some reported dollars invested but others reported commitments that were not yet funded.

Also, in 1986 some put leveraged buy-out investments in the same category as venture capital.

In addition, several funds that had substantial amounts in venture capital in 1986 declined to provide the information for 1987. Overall, 66 of the Top 200 funds reported venture capital investments in 1987, down from 75 in 1986.

The numbers for both years exclude the General Electric Co. pension fund, Stamford, Conn., which has substantial venture capital investments but groups them with other alternative investments in the *Pensions & Investment Age* survey.

The $37.5 billion American Telephone & Telegraph Co. pension fund, New York, reported the biggest amount in venture capital, $383 million, up from $316 million in 1986.

This increase is just what AT&T had planned, said Tom Judge, division manager in AT&T's investment management organization.

"We go at this in what we perceive to be a prudent fashion, not in a hurry," he said.

AT&T will add to its venture capital investments in 1988 if good opportunities are available, he said.

The $11 billion GTE Corp. pension fund, Stamford, Conn., increased its venture investments substantially, to $182 million from $92 million. This came about as a result of funding previous commitments, said John Carroll, president of GTE Investment Management Corp.

As for venture capital activity in 1988, Mr. Carroll said, "We never say never."

1988 might be a good year for pension funds to be active in venture capital, as good deals might be available at bargain prices. Some funds, however, might shy away because the market for initial public offerings became so tight after the Oct. 19 stock market plunge.

Mr. Judge agreed the IPO market is a negative for venture capital, but the lower prices at which deals likely will be available is a plus.

"I suspect one area that will be put on the back burner is venture capital," said John Hitchman, executive director of the $10.6 billion Washington State Investment Board.

Mr. Hitchman stressed he is speaking about other funds here; the Washington board, whose venture capital investments grew to $210 million in 1987 from $190 million in 1986, will continue seeking deals in that area, as there likely will be good values available. ■

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Top 200 funds investing in venture capital ($ mils.)

Fund	Assets
AT&T	383
Washington State Board	210
Michigan State	196
GTE	182
US WEST	161
University of California	111
Minnesota State Board	86
Sears, Roebuck	71
Oregon Public Employes	67
Ameritech	65
Honeywell	62
New York State & Local	61
Exxon	55
United Technologies	54
Detroit Retirement Systems	52
Pennsylvania State Employes'	52
Ford Motor	50
E.I. du Pont de Nemours	45
Illinois Teachers'	43
Atlantic Richfield	42
Pennsylvania Public School	42
World Bank	40
Los Angeles County	39
New York State Teachers	36
Ohio Public Employees	35
Wisconsin Investment Board	35
Chrysler	33
Unisys	33
Allied-Signal	30
Dow Chemical	30
General Foods	30
TRW	28
Massachusetts State Board	27
American Electric Power	26
Chicago Municipal Employees	24
NYNEX	24
RJR Nabisco	24
Delta Air Lines	20
Grumman	20
Ohio State Teachers	20
Ohio School Employees	19
Southern California Edison	19
Southwestern Bell	19
Standard Oil	19
Illinois Municipal	16
Utah State	15
Pacific Lighting	14
Illinois State Board	13
Minnesota Mining & Mfg.	13
Pension Reserves Investment	13
Ohio Police & Firemen's	12
Army and Air Force Exchange	11
Armco	10
Xerox	10
Eli Lilly	9
Iowa Public Employees	9
Prudential Insurance	9
Digital Equipment	7
Unocal	7
Inland Steel Industries	5
Nevada Public Employees'	5
Merck	4
Philadelphia Board of Pensions	3
Times Mirror	3
National Rural Electric	2
Aluminum Co. of America	NA
Boeing	NA
Deere	NA
Hewlett Packard	NA
Hughes Aircraft	NA
Presbyterian Church (U.S.A.)	NA
Westinghouse Electric	NA
TOTAL	**2,910**

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Market crash

Continued from page 1

centage of the stock universe, he concluded, "To do good, asset mix is the key. . . . If a fund was either equally weighted in stocks and bonds or overweighted in bonds, it did pretty good."

Not surprisingly then, funds with the lowest stock allocations — generally public and union funds — lost much less money than the mainly corporate funds that were heavily weighted in stocks:

- The $7.524 billion Western Conference of Teamsters Pension Trust, Seattle, fared the best among the 66 funds surveyed, down 1.3% between Oct. 1-31. The Western Teamsters had only 11.4% in stocks, and 80.1% in the broad fixed-income category (including 55.9% in bonds and 22% in annuities).

Alan D. Biller, the fund's consultant, attributed the Western Teamsters' performance in October to decisions made years ago to set up large dedicated bond portfolios. "They were properly designed so they didn't fall apart in the face of interest-rate declines" and calls," he said.

"Going into this year, we knew stocks were overvalued, but the fund takes a long-term view. So even while we were buying stocks, we maintained a very large real estate position (8.5% of assets) and didn't run down the bond holdings."

In October, as it turned out, "we were lucky," Mr. Biller said.

- The $1.663 billion defined benefit plan at Union Carbide Corp., Danbury, Conn., which lost only 1.9% in October, was the second-best performer among the 66 surveyed and the only corporate fund to rank in the top third. Union Carbide had 28% in stocks, but 72% in fixed income, of which 58% was in bonds.

Carbide's low equity exposure is deliberate: Fund officials decided the amount in equities would be no greater than its pension surplus, with the liabilities covered by fixed income. To protect earlier equity gains, bond durations were extended beginning in August, reaching a maximum of 2½ to three years beyond liabilities by October. (They've since been reduced to about 1½ years.)

"Even though we got hurt, (Carbide's stock loss) was almost entirely offset by the rise in the bond portfolio," said Michael F. Hoben, president of Benefit Capital Management. Corp., Carbide's in-house asset management arm.

- The $12.446 billion North Carolina Retirement Systems, Raleigh, which lost 2.7% in October, had just 23% of its assets in stocks, but 61% in bonds and 15% in mortgage-backed securities.

C. Douglas Chappell, deputy treasurer/director of the state's investing and banking division, attributed his fund's performance solely to its asset mix. Although the equity exposure hasn't moved above its Sept. 30 level of 23%, Mr. Chappell said, "We're not afraid to make some equity commitments."

By contrast, Northrop Corp., Los Angeles, whose defined benefit assets declined 16.7% in value, had 70% of its $2.519 billion in stock.

Similarly, assets of the $2.624 billion defined benefit plan of Pacific Gas and Electric Co., San Francisco, dropped 16.2%; PG&E had 74% of its assets in stocks. ■

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Insurance

Continued from page 2

inquiries, but we're not getting new clients" for portfolio insurance, said Gene Brody, director of options management at Oppenheimer Capital Corp., New York. Oppenheimer's portfolio insurance assets declined to $900 million from $1.5 billion.

During the Oct. 19 market crash, most portfolio insurers had trouble executing dynamic hedging, the predominant form of portfolio insurance in which the manager sells futures short to create a synthetic put option to protect the underlying portfolio's value.

Difficulties in the futures markets during the plunge have led some to conclude that a portfolio insurance strategy relying solely on futures is unreliable.

"Under the conditions it was needed most, it didn't work," said Edgar Peters, senior portfolio analyst-structured investment products, The Boston Co. Inc., Boston.

Boston Co. moved most of the $300 million it had under portfolio insurance to different strategies, such as tactical asset allocation.

Mr. Peters is urging clients that want portfolio insurance to use actual put options, rather than a synthetic put strategy, as options' cost and level of protection provided are known up front. Still, the firm suggests this only for short-term hedging, he said.

Others touting the use of actual put options for portfolio insurance are Drexel Burnham Lambert Inc.'s Chicago office, which saw its assets under this strategy grow to $3 billion from $2 billion in the fourth quarter, and Northern Trust Co., Chicago, which saw its assets grow to $250 million from $150 million.

"With the put, you get exactly what you purchased ahead of time," said Brian Bruce, manager-new products and systems at Northern Trust.

Others contend an options-based strategy could be too costly. "If you can buy the long-term puts at a reasonable price — which I don't think you can — it's reasonable," Mr. Brody said. Some managers buy a series of short-term puts to replicate a longer one, while others use long-term options.

Mr. O'Brien, whose firm pioneered dynamic hedging, said options use might give some clients more protection than they need, but could be appropriate for others.

In either a futures or options strategy, the cost of portfolio protection is going to be higher from now on, because of increased stock market volatility, predicted Jeffrey Geller, vice president of BEA Associates Inc., New York. There likely will be greater use of listed options because of their more precise cost, he said.

BEA had $350 million in portfolio insurance as of Dec. 31, down from $1.2 billion three months earlier; most of these clients have gone into other types of hedging strategies offered by BEA, Mr. Geller said.

The futures-based strategy has its defenders. "We still believe it's a viable strategy, although there are some questions in the marketplace there weren't before Oct. 19," said Jim Carder, president of Westridge Capital Management Inc., Los Angeles. Westridge manages about $40 million in the strategy, unchanged from Sept. 30.

"Most of our clients are very, very pleased with the results they're getting," said Pete Thomas, vice president of Skye Investment Advisors Inc., Cupertino, Calif. Like clients of many portfolio insurers, they will miss their target return somewhat, but will be better off than if they were not hedged at all in 1987, he said. Skye's portfolio insurance assets declined to $646 million from $813 million in the fourth quarter; the two clients that left said it was a market-timing decision.

Mr. O'Brien said from Jan. 1 through Oct. 19, the average LOR account returned about five percentage points more than it would have without the hedge. This was three or four percentage points below where the return should have been, but well within expectations given the market's volatility, he said.

Some managers that use futures also have the choice of selling the securities in the underlying portfolio to cut off the downside — a strategy that could become increasingly important. "I view using the underlying assets as an important safety valve," said Jon Jankus, director of investments at Webster Capital Management, New York. Its $80 million in this strategy at year end was the same as at the end of the third quarter.

Aetna Life & Casualty Co., Hartford, Conn., which had $17 billion in futures-based portfolio insurance Sept. 30, had $3 billion Dec. 31, largely in strategies focusing on the cash securities. Clients in the futures-based strategy discontinued their programs at Aetna's urging because of the undependability of the futures markets in October, said Ralph Tate, vice president.

Bankers Trust Co. — Investment Management Group, New York, which had the authority to move in the cash markets in most of its portfolio insurance accounts, met its goals in those accounts even in the October market (*P&I Age*, Nov. 2). Still, some clients discontinued portfolio insurance; Bankers Trust had $1 billion in the strategy at year end, down from $4 billion Sept. 30.

Managers focusing on bond portfolio insurance, such as Lotsoff Capital Management, Chicago, and Aegis Capital Management, New York, said the strategy worked well with a mix of options and futures.

Lotsoff estimated its insured accounts will return 8.5% for 1987 (final figures aren't in yet), while the Shearson Lehman Government/Corporate bond index returned 2.3%.

Thomas Zucosky, president of Aegis, said bond portfolio insurance didn't suffer the same problems in October as its equity counterpart because of the great liquidity in Treasury bond futures and options on those futures. Their volume is even greater than that of S&P 500 stock index futures.

Lotsoff had $121 million in portfolio insurance as of Dec. 31, up from $75 million a quarter earlier; Aegis Capital had $60 million, up from $55 million.

Stephen Bossu, senior vice president of Lotsoff, said equity portfolio insurance managers might have underestimated the cost.

In addition, no one foresaw how portfolio insurance would perform in a rapidly falling stock market. "There may be conditions under which it is more or less implementable and it may be more or less implementable in different vendors' hands," Mr. Grauer said.

Analyzing the rapidly falling market of Oct. 19, the Brady Commission has called portfolio insurance a major factor in the plunge, predictably angering vendors.

It also said a feature of the crash was aggressive stock selling by arbitrageurs and others in anticipation of portfolio insurance trades.

A solution to this kind of "front running" would be allowing portfolio insurers to do "sunshine trades," announcing their intentions in advance, Mr. O'Brien said.

"I think that will permit the market to anticipate these trades and handle them the way they ought to be handled," he said.

"If the whole world knows what a portfolio insurance program is going to do, no one can really front-run it."

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Venture cap

Continued from page 1

stocks has come about since the October market plunge. Much of the activity has come from pension funds and money managers that had the companies in their venture capital portfolios when they were still private.

"Who better than venture people understand the needs of some of these companies?" said John C. Baker, vice president of Alan Patricof Associates Inc., a venture capital manager of $500 million, about half from tax-exempt investors. "Venture firms, as a rule, are reasonably good judges of value."

Pension officers apparently agree. The $10.6 billion Washington State Investment Board, Olympia, has modified its venture capital partnership agreements to allow them to buy stocks of companies that were part of the portfolio before they went public, said John Hitchman, executive director. The partnerships made some such purchases in October and November, he said, declining to identify the stocks. Washington has $210 million invested in venture capital partnerships.

The $37.5 billion American Telephone & Telegraph Co. pension fund, New York, is allowing its venture capital manager to buy additional small-cap stocks in a portfolio of the stock distributions AT&T receives from venture partnerships, said Tom Judge, division manager in AT&T's investment management organization.

Manufacturers Hanover Investment Corp., New York, runs the portfolio, which has about $20 million in public securities. Overall, MHIC manages about two-thirds of AT&T's $383 million venture capital investments; AT&T runs the rest in-house.

Allied-Signal executives, experienced at both venture capital and equities management, have bought several small-cap companies lately, Mr. Tokar said. "There are just some wonderful values out there," he said.

When stocks were selling at 30 times earnings, venture investors looked at the public market primarily as an exit, Mr. Baker said. Now, with price-earnings ratios substantially lower, they are starting see it as an entrance.

Also, many small-cap companies are priced low not only in relation to earnings but also in relation to cash flow, making them attractive takeover candidates, he said. Venture capitalists could emerge as "white knights," Mr. Baker said.

Some investors see values available across the board in small-cap companies. "You could take your pick," said Mr. Tokar, who declined to list individual stock picks because there are so many of them.

Others are focusing on individual industries. Mr. Baker favors technology companies: "My sense is the number of opportunities there may pick up."

First Chicago Investment Advisors' First Post-Venture Fund has more investments in technology than in other industries, but the fund is far from being technology only, said Alvin W. Marley, vice president.

The fund, which invests in companies with market capitalizations of $10 million to $100 million, holds such stocks as **Software Publishing Corp.** and **MSI Data Corp.,** both in technology, but also has issues like **Regal-Beloit Corp.,** a machine-tool maker, **Guaranty National Corp.,** an auto insurer, and **Murray Ohio Manufacturing,** a maker of bicycles and lawn mowers.

Launched in December 1986, the fund has drawn $60 million in commitments from tax-exempt investors, indicating acceptance of what Mr. Marley calls "minicap" investing. "I believe it's a conservative alternative to venture capital."

Mr. Baker said Alan Patricof Associates hasn't discussed public market opportunities extensively with its limited partners, but expects them to accept these ventures as part of the evolution of venture capital investing. "It behooves us as fiduciaries to take advantage and look at a wider range of opportunities," he said.

Mr. Baker acknowledged public-market investments usually bring in lower returns than traditional venture capital. "But it's still a superior return with far lower risk," he said.

Most small-cap stocks did not produce good returns in 1987; an index of about 3,000 such issues that Wilshire Associates, Santa Monica, Calif., tracks for First Chicago was down 12.6%, Mr. Marley said. (He noted the First Post-Venture Fund beat that index with a positive return of 2.9%.) The large-cap Standard & Poor's 500 stock index was up 5.2% for the year.

The poor returns for 1987, however, indicate to some investors this is the time to get into small-cap issues.

"The true value buyer is recognizing once again that there is good value in this minicap segment of the marketplace," Mr. Marley said.

Mr. Hitchman added, "Once this market emerges from its bear posture, I think the smaller-cap stocks will emerge as the great performers they did in '75." ▪

Funds keep global perspective

By Marlene Givant

Top 200

International investments of the Top 200 pension funds increased 30.4% in the year ended Sept. 30, with several funds dramatically changing their exposure to the area.

International assets totaled $31.896 billion in the 1987 survey vs. $24.465 billion the previous year.

In many cases, the size of the funds' investments abroad was either sheared or doubled in the period between Sept. 30, 1986, and Sept. 30, 1987.

Of the funds that joined the list in 1987, several — including the $6.182 billion Arizona State Retirement System, Phoenix, and the $3.311 billion Kansas Public Employees' Retirement System, Topeka — made their first commitments to international during the period. In other cases, funds had been investing internationally but hadn't ranked among the Top 200. Examples include the $1.305 billion Army and Air Force Exchange Service, Dallas, with $142 million invested internationally, and the $1.377 billion Merck & Co. Inc. plan, Rahway, N.J., with $91 million in international assets.

Many of the 18 funds that dropped off the list since last year still invest overseas but did not meet the Top 200 cutoff in terms of total fund assets. One example is FMC Corp., Chicago, with $65 million in international assets.

A few funds on the list have international exposure only through the investments of a domestic manager. And international assets of several funds were not included because the companies did not supply information.

Because of the 45.5% rise in the Morgan Stanley Capital International Europe Australia Far East index during the period, a fund with the same exposure or even a 25% higher exposure than the previous year's probably lowered its international allocation in 1987. Often, funds did so to return to target allocations.

"We have been taking profits in that sector (international equities) all year long. We would not expect to reduce that allocation any further and an increase is not in the foreseeable future," said Jay Burden, manager-fixed income investments of the $4.1 billion pension fund of Allied-Signal Co., Morristown, N.J. He added, however, the fund is considering investing in international bonds.

International assets of 12 funds — the $3.189 billion City & County of San Francisco Employees; $6.132 billion Tennessee Consolidated Retirement System, Nashville; $4.423 billion Caterpillar Inc., Peoria, Ill.; $3.536 billion Illinois Municipal Retirement Fund, Chicago; $2.676 billion General Foods Corp., White Plains, N.Y.; $2.06 billion Southern California Edison Co., Rosemead; $11.228 billion University of California, Berkeley; $2.948 billion Detroit Retirement Systems; $1.611 billion American Stores Co., Salt Lake City; $15.632 billion State of Wisconsin Investment Board, Madison; $1.946 billion Standard Oil Co., Cleveland; and $3.56 billion Pacific Gas & Electric Co., San Francisco — increased more than 100% during the 12 months while assets of 14 funds were level or decreased.

Assets invested in international fixed income increased 5.5% to $4.529 billion from $4.294 billion the previous year. The vast majority of bond investors also had international equities.

Funds dropped out of the list for various reasons. The $13.7 billion Florida State Board of Administration, Tallahassee, which had a small exposure to international through a domestic manager in 1986, had no international exposure as of Sept. 30. But the fund soon will fund the two international managers it appointed in February 1986.

Florida has decided to fund Nomura Capital Management, and J.P. Morgan Investment Inc., both of New York, contingent on the results of an internal analysis of risk, asset allocation and other considerations, said Cliff Hinkle, executive director. ▪

Funds investing overseas among the Top 200 ($ mils.)

Fund	Total	Equities	Fixed
United Nations Joint Staff	3,686*	2,070	953
TIAA-CREF	3,231	3,131	100
General Electric	1,900*	1,300	500
GTE	1,810	1,501	309
AT&T	1,771	1,771	
E.I. du Pont de Nemours	1,167	429	738
US WEST	885	885	
Ameritech	875	750	125
Prudential Insurance	801	664	137
World Bank	800	600	200
United Technologies	769	485	284
Oregon Public Employes	767	767	
Atlantic Richfield	644	573	71
Illinois Teachers' Retirement	526	451	75
Arizona State Retirement System	503	503	
Hawaii State Employees	477	477	
San Francisco Employees	476	241	235
Tennessee Consolidated	445	283	162
Caterpillar	430	430	
Owens-Illinois	396	330	66
Illinois Municipal Retirement Fund	393	303	90
Exxon	341	341	
Alaska State Retirement System	332	332	
American Stores	325	325	
Allied-Signal	300	300	
Monsanto	300	300	
Southwestern Bell	279	279	
Pension Reserves Investment	274	274	
Xerox	268	268	
Amoco	262	262	
Sears, Roebuck	248	248	
Sun	242	242	
Honeywell	234	141	93
Delta Air Lines	220	220	
Bechtel Power	213	187	26
Illinois State Universities	211	211	
TRW	206	206	
ITT	205	205	
NYNEX	203	203	
USX	200	200	
Hercules	181	181	
Southern New England Telephone	181	181	
Pacific Gas and Electric	179	179	
American Airlines	175	125	50
Dow Chemical	175	175	
Unisys	173	173	
Minnesota Mining & Manufacturing	172	172	
National Rural Electric	163	163	
Wisconsin Investment Board	150	75	75
Florida Power & Light	147	147	
Army and Air Force Exchange	142	114	28
Philip Morris	134	134	
Inland Steel Industries	131	131	
Standard Oil	131	131	
Kansas Public Employees'	127	112	15
Kraft	125	125	
Travelers	113	113	
Presbyterian Church (U.S.A.)	96	91	5
Merck	91	70	21
North American Philips	87	87	
General Foods	82	82	
Southern California Edison	77	77	
Unocal	75	75	
Halliburton	68	61	7
Houston City	66	66	
Aetna Life & Casualty	65	65	
Eli Lilly	60	60	
Armco	51	51	
Chicago Municipal Employees	51	51	
New York City Retirement	51	51	
Tennessee Valley Authority	51		51
Louisiana Teachers	50	50	
Massachusetts Board of Retirement	50		50
Nevada Public Employees'	50	50	
Commonwealth Edison	47	34	13
Pacific Lighting	46	46	
CIGNA	45	45	
Pan American World Airways	45	45	
Utah State Retirement Fund	42	42	
Episcopal Church Pension Fund	40	40	
Illinois Board of Investment	40	40	
International Paper	40	40	
University of California	39	39	
Southern Baptist Convention	32	32	
RJR Nabisco	30	30	
Chrysler	27	27	
Mobil Oil	23	23	
Detroit Retirement Systems	22	15	7
Trans World Airlines	20		20
Pennsylvania Employees'	12		12
Goodyear Tire & Rubber	11		11
TOTALS	**31,896**	**26,253**	**4,529**

* Totals include other international assets

Leaseback innovation put to work

Deal limits key pacts

By Brad Rudin

Long-term financing for a paper factory jointly sponsored by Minnesota Power, Duluth, and Pentair Inc., St. Paul, Minn., was completed early this month using an innovative sale and leaseback.

The $380 million leveraged lease was arranged by First Boston Corp., New York. Richard A. Sun, a vice president in First Boston's private finance unit, said investors' sole recourse once the project is complete (probably by the end of the year) is through cash deficiency and keepwell agreements that are limited to about 50% of the project's cost. These agreements provide financial support for the investors if cash flow from the enterprise is insufficient to service the debt.

Investors in Lake Superior "saw that the project had a high probability of being very successful."
—Richard Sun
First Boston

In addition, there are no long-term sales contracts for Lake Superior Paper Industries, Duluth, the joint venture sponsored by Minnesota Power and Pentair. Long-term contracts, favored by investors because they guarantee cash flow from the enterprise, are typically a feature of co-generation projects.

"This is the first project we think that was done with a limited (cash deficiency agreement) and no long-term formula price guaranteed contract," Mr. Sun said.

Equity for the project, which started limited operations late last year, was provided by subsidiaries of Public Service Electric & Gas Co., Newark, N.J.; NYNEX Corp., New York; Southern California Edison Co., Rosemead; Dana Corp., Toledo, Ohio; and Southern Indiana Gas and Electric Co., Evansville.

Debt investors are Prudential Insurance Co. of America, Newark, N.J.; Northwestern Mutual Life Insurance Co., Milwaukee; John Hancock Mutual Life Insurance Co., Boston; and the Wisconsin State Board of Investment, Madison.

Lake Superior obtained favorable financing terms on the 25-year lease because "investors saw that the project had a high probability of being very successful," Mr. Sun said. The Lake Superior Paper Industries plant produces supercalendered paper, a semiglossy paper used in catalogs, newspaper supplements, magazine inserts and other commercial printing products.

Proceeds from the sale of the plant will pay off bank debt and other costs related to the joint venture, according to an 8-K report filed by Pentair. The project, first announced in late 1985, initially was financed with a $360 million revolving credit-term loan agreement with 14 banks.

Pentair, which owns a 50% interest in Lake Superior Paper, produces paper, power tools, machinery, industrial lubrication, pumps and other products. Minnesota Power operates an electrical power generation system as well as units that provide telephone service, natural gas and water and wastewater treatment.

Equity investors provided 29% and lenders, 71%, of the project's long-term capital, Mr. Sun said.

In a sale and leaseback, equity investors buy equipment from the project sponsor and lease it back. The incentive typically comes from tax advantages for equity investors, which are passed along to the equipment user in the form of lower rental rates.

Five-year depreciation and the investment tax credit are available to Lake Superior under transition rules that apply to the Tax Reform Act of 1986, Mr. Sun said.

Tax considerations did not play a primary role in the deal, though. Instead, Mr. Sun said, the sponsors needed long-term fixed-rate financing, flexible lease renewal and purchase provisions.

The option to purchase is available at certain points during the lease term and at the end of the 25-year agreement, while renewal options are also available at the end of the lease term. ■

Lake Superior Paper Industries, Duluth, a joint venture sponsored by Minnesota Power and Pentair Inc., is being financed using an innovative sale and leaseback arranged by First Boston Corp. that features a limited cash deficiency agreement and no long-term formula price guaranteed contract.

LBO power

Continued from page 3

ment to leveraged buy-outs the $10.6 billion Washington State Investment Board, Olympia, Wash., made to KKR in 1987. Washington is the largest pension investor in buy-outs; its total commitment is about $1 billion.

David Weig, deputy director, said none of the $430 million has been invested yet; that will take several years to complete.

Tom Judge, division manager-investment management operations for the $37.5 billion American Telephone & Telegraph Co. pension fund, New York, said AT&T had $200 million in buy-outs in 1987, compared with $82 million a year earlier, an increase of 145%.

Among the funds that reported decreases in the book value of their leveraged buy-out investments as of Sept. 30:

- The $8.8 billion Oregon Public Employes Retirement System, Salem, down 34.5%, to $262 million from $400 million;
- Wisconsin State Board of Investment Board, Madison, Wis., down 28% to $144 million from $200 million;
- GTE Corp., Stamford, Conn., down 30% to $126 million from $180 million;
- The $2.2 billion Massachusetts Pension Reserves Investment Trust Fund, down 28%, to $36 million from $50 million;
- The $66.17 billion Teachers' Insurance and Annuity Association, New York, down 25% to $600 million from $800 million.

John Carroll, president of GTE Investment Corp., the pension investment unit of the GTE fund, said levels dropped because "several of our earlier funds paid out substantial assets" during 1987 and the payouts outweighed any new investments.

Soaring stock prices and increasing competition from new buy-out investors that boosted bidding prices out of range caused some funds to be net liquidators. Market conditions also were ripe to take leveraged buy-out companies public or to sell them to other private investors, causing those earlier investments to be liquidated.

Pension executives at Oregon, Wisconsin and GTE attributed lower leveraged buy-out levels to liquidation, not lack of interest.

In fact, Oregon and Wisconsin raised their commitments considerably during 1987.

James C. George, investment manager at Oregon, said commitments to the KKR fund rose $600 million during 1987; $100 million in funds were rolled over from 1986 and reinvested.

Marshall Burkes, executive director of the Wisconsin fund, said commitments rose "considerably" in 1987 to $540 million; he declined to say by how much.

Others reporting lower investments in leveraged buy-outs were: the $3.1 billion Delta Air Lines Inc. fund, Atlanta, to $50 million from $65 million; the $2.9 billion Textron Inc. fund, Providence, R.I., to $50 million from $70 million; the $3.8 billion Iowa Public Employees Retirement System, Des Moines, to $49 million from $75 million; the $6.8 billion Allied-Signal Inc. fund, Morristown, N.J., to $30 million from $45 million; and the $3 billion Illinois State Board of Investment, Chicago, to $15 million from $40 million.

Those that did not commit to buy-outs in 1987 are sharing the optimism of those that did; several pension funds executives said they might reinvest profits from leveraged buy-out investments when deals materialize.

That list includes TIAA, where J. Daniel Lee, vice president of investments, said the stock market correction is one reason to finance new buy-outs. During the past two years, he said, the fund — a direct investor in buy-outs — was reluctant to make bids.

The $27.3 billion General Electric Co. pension fund is also a direct investor and, like TIAA, saw 1987 as a good year to reap the rewards of previous investments or to refinance its positions while interest rates were low, said Robert Morris, senior vice president, General Electric Investment Corp., Stamford, Conn..

Mr. Morris said the fund is ready to invest in new opportunities and already has bid on a new deal in January. ■

Funds investing in LBOs among the Top 200
($ millions)

Fund	Assets
Washington State Investment Board	990
General Electric	600
TIAA-CREF	600
Oregon Public Employes	262
New York State & Local Retirement Systems	218
AT&T	206
Wisconsin Investment Board	144
GTE	126
Michigan State	110
United Technologies	79
Delta Air Lines	50
Textron	50
Iowa Public Employees Retirement System	49
Minnesota Mining & Manufacturing	41
World Bank	40
Pension Reserves Investment Management Board	36
Allied-Signal	30
Illinois State Board of Investment	15
Grumman	10
Honeywell	10
ITT	10
Eli Lilly	2
Total	**3,678**

Name, owners change

RICHMOND, Va. — Continental Investment Advisors Ltd. has changed its name to Richmond Capital Management.

The name change reflects the sale of the firm to its principals.

It had been part of The Continental Group of insurance and financial services companies owned by Combined International Corp., Chicago.

Continental Investment Advisors' principals agreed late in 1986 to buy the firm (*Pensions & Investment Age*, Oct. 27, 1986) and completed the purchase April 1. The name change was effective Jan. 1.

"While we were with The Continental Group, we were a wholly owned subsidiary and our name and affiliation were synonymous," said Charles E. Keller, president.

"However, since we are no longer a part of Continental, we feel our own identity should be established in the marketplace," Mr. Keller added.

Richmond Capital Management, a fixed-income specialist, manages $900 million, of which $540 million is tax exempt, for 30 clients in 14 states.

Clients include corporate and public pension funds, foundations, endowments and corporate cash accounts. ■

2/8/88 S2710-2

Reform wrangling leaves sour aftertaste

By Nicky Robertshaw

News analysis

WASHINGTON — More than a month after the Pension Protection Act of 1987 became law, bad blood still remains among key players on Capitol Hill and in the Reagan administration.

"If David Walker wants anything from us, we'll suggest that he go and see the tax committees," said a key congressional labor committee aide last week, referring to the assistant secretary of labor.

Such sniping, although bitter, could simply be the latest round of fighting among groups that, eventually, will have to do business with each other. More troublesome, however, is the possibility that the sniping will affect the way in which pension-related issues are handled this legislative session.

The problem stems from long-standing jurisdictional tugs-of-war over the pension legislation between the tax committees — the House Ways and Means Committee and Senate Finance Committee — and the labor committees — the House Education and Labor Committee and the

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Equity market exodus

$10 billion cut could be legacy of crash

By Joel Chernoff

NEW YORK — The nation's 1,000 largest pension funds might have reduced their long-term commitment to the stock market by as much as $10 billion in the wake of the Oct. 19 crash, a *Pensions & Investment Age* survey shows.

Other funds are considering reducing their equity commitments, according to the survey, suggesting even more assets might be taken from the market.

And Robert Arnott, vice president and strategist at Salomon Brothers Inc., New York, projects pension funds will pull more than $120 billion out of active equity portfolios during the next two years.

Largely based on discussions with pension executives, Mr. Arnott said pension funds will withdraw $60 billion in 1988 and $60 billion in 1989, and these figures could be much higher. At minimum, this translates into a shift of more than 20% of private and public funds' roughly $560 billion in actively managed equity assets.

Mr. Arnott, however, said the effect on the stock market is hard to determine because pension flow is only one of many factors. Renewed buying by individuals and foreign investors, and continued corporate purchases of their own stock could more than offset the pension withdrawals, he said.

The projected shift could have devastating effects on active equity managers, whose median returns have underperformed the Standard & Poor's 500 stock index since the beginning of 1983.

Indexation of stocks has soared to 25% of pension equity allocations from 9% in late 1982. Meanwhile, fee pressure on active managers is getting increasingly intense (*P&I Age*, Jan. 25).

Several pension experts said the $60 billion-per-year figure is too high, but most agreed trends will be against active management and there will be a move into fixed income and other asset classes.

P&I Age's survey, which went to 600 of the nation's 1,000 largest pension funds, found 7.5% of the 173 respondents had made significant shifts in their long-term asset mixes in the wake of the crash.

On average, these funds had reduced their long-term equity commitments by eight percentage points, which, if applied to the entire 1,000 largest funds universe, would take $10.4 billion out of the equity market permanently.

In addition, another 10% of the respondents were considering changing their long-term asset allocations to reduce their equity exposure.

The impact of such reductions could fall hardest on active equity managers. "Active managers just can't be cavalier anymore," said David L. Eager, managing partner of D.L. Eager Associates, Louisville, Ky.

Mr. Arnott said the shift out of active equity management reflects four trends. He expects the first

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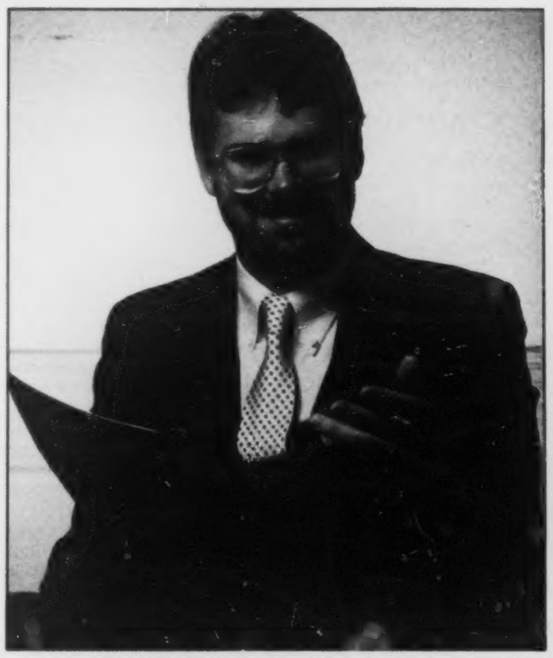

Robert Arnott of Salomon Brothers Inc. says pension funds could pull as much as $120 billion out of active equity portfolios in the next two years.

Photo by Douglas Konkol

The Pension Benefit Guaranty Corp. and LTV are back in court as the agency seeks a summary judgment forcing the company to take back three terminated plans.

Agency renews court battle over LTV termination

By Fred Williams

NEW YORK — In a sharply worded 110-page motion, the Pension Benefit Guaranty Corp. petitioned U.S. District Court for a summary judgment ordering The LTV Corp. to restore the company's terminated steel-division pension plans.

Dallas-based LTV has not recognized a September order by the PBGC restoring the three defined benefit plans to the company. The plans were involuntarily terminated by the PBGC in January 1987 because they were severely underfunded.

The motion, filed Jan. 29 in U.S. District Court for the Southern District of New York, said LTV should be required to resume responsibility for the plans as of their pretermination status Jan. 13, 1987.

The PBGC said restoration is appropriate because: LTV's financial condition has improved substantially since the plans were terminated; it has abused the pension plan insurance program by establishing plans that essentially continued the terminated plans, and; it has demonstrated a willingness to fund retirement programs at levels comparable to those before termination.

The motion cites a financial analysis

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INSIDE

Saying no to trading restrictions — P. 13

strictions on stock market trading
stered the strongest opposition to
ommission.

LATE NEWS

Mineworkers' pact offers 401(k)

WASHINGTON — Members of the United Mine Workers of America will be able to participate in what is believed to be the first nationwide multiemployer 401(k) plan under their new contract.

The UMWA and the Bituminous Coal Operators Association reached tentative agreement on the pact Jan. 30. Union members were scheduled to vote on it Feb. 8; ratification is expected.

Under the plan, to be set up within 90 days of ratification, UMWA members will be able to contribute up to 10% of their pretax wages. They will be able to choose among four investment options. Fund trustees are to select two of the options from a list prepared by the union and two from a list submitted by the employers' association.

Between 65,000 and 70,000 UMWA members will be eligible to participate in the 401(k).

University wins divestiture appeal

LANSING, Mich. — The Michigan Court of Appeals has ruled unconstitutional a 1982 state law forcing public colleges and universities to divest themselves of South Africa-related stocks.

The appeals court overturned a 1985 ruling by the Ingham County Circuit Court, Lansing, that upheld the law in a suit brought by the University of Michigan, Ann Arbor.

Norman Herbert, investment officer at the university, said the ruling "upholds the regents' control of financial affairs." The circuit court had ruled university regents' autonomy covered only educational, not financial, matters.

Mr. Herbert noted the university's endowment fund, now at $250 million, has divested all but $140,000 worth of stocks in companies doing business in South Africa; it held $52 million in such stocks in 1982. University officials' objection was not to divestiture as such, but to the state's intrusion into the regents' authority.

The law applied only to public colleges and universities; Michigan has no divestiture law for state pension funds.

NYNEX fund gets new chief

NEW YORK — Richard Wolf, who managed subsidiary cash operations at NYNEX Corp., has been appointed investment director for the company's $14.3 billion pension fund, replacing Robert A. Wysocki, who has become NYNEX's director of investor relations.

Also at NYNEX, William Coughlin, who was an investment director managing the in-house assets for NYNEX, has joined Dreman Value Management, New York, as vice president-money management, his office confirmed. Mr. Coughlin was out of town and could not be reached for comment.

404(c) hearings to get under way

WASHINGTON — The Department of Labor begins two days of hearings this week on its proposed regulation spelling out what sponsors of participant-directed individual accounts must do to avoid fiduciary liability for the accounts.

The proposal, affecting Section 404(c) of the Employee Retirement Income Security Act, has drawn at least 226 comment letters from a broad range of corporate sponsors, trade groups, investment companies, insurance companies and other interested parties since it was issued in September (*Pensions & Investment Age*, Sept. 21). Representatives of at least 25 groups will testify at the hearings.

The comment letters raise concerns that the "broad range" of investment choices and other requirements in the proposal would be costly and troublesome to implement, and that guaranteed interest contracts should be allowed as the "safe" investment option required under the regulation.

1988 benefit levels established

WASHINGTON — The maximum annual benefit that can be be funded through a qualified defined benefit plan will be

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DEPARTMENTS

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Manager questionnaires now out

Questionnaires for *Pensions & Investment Age*'s annual issue profiling the nation's institutional money managers are in the mail. For your firm to be profiled in the May 23 directory, please return the questionnaire by Feb. 26 to Christine Philip, directory coordinator, *Pensions & Investment Age*, 740 N. Rush St., Chicago, Ill. 60611-2590.

If you have any questions, or have not received a questionnaire by Feb. 15, please contact Ms. Philip at (312) 649-5217.

Researchers tip managers to winners

By Jacqueline Dutton and Fred Williams

Outside research resulted in some of the best stock tips and strategic moves of 1987, money managers said.

Here's a sampling of some of the best advice outside research firms provided last year.

Richard Morrison, a principal of Jurika & Voyles, Oakland, Calif., credits two Stifel Nicolaus & Co. Inc. researchers for some invaluable strategic advice last summer.

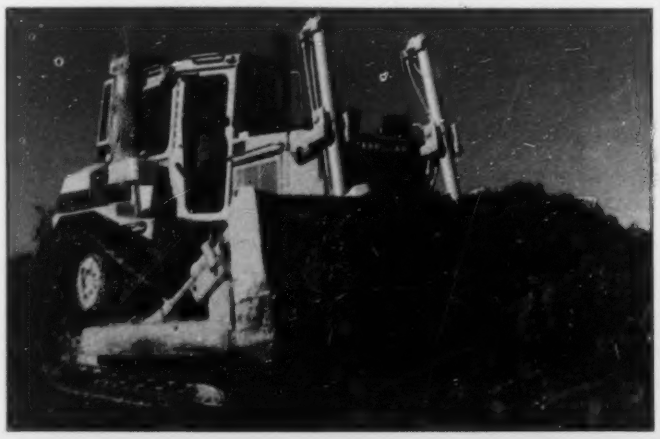
Mr. Morrison said Duane Arnold and W. Clay Allen "really alerted us to the fact that we would have a major drop in the market in October — not to the extent we had — but to some degree," Mr. Morrison said. "So we cut back fairly substantially in equities and that kept us from getting completely clobbered."

He said the firm's balanced accounts were 85% in stocks before the warning, and were cut to 60% stocks heading into the October stock market crash, with plans to go down to 50%.

Mr. Morrison also said some credit should go to Goldman, Sachs & Co. drug industry analysts Frederic Greenberg and David Musket, who were instrumental in giving Jurika & Voyles advice on some of its best performers during 1987: **Syntex Corp.**, which was bought at 27 in

Continued on page 30

Caterpillar Inc. was a big stock hit for Investors Asset Management in 1987, and Richard C. Erwin of the firm credits Merrill Lynch analyst Alexander Blanton with turning him on to the winner.



New 'news wars' entry

BOSTON — Richard Chimberg is trying to bite the hand that used to feed him.

Mr. Chimberg has launched a weekly newsletter, Investment Management Weekly, to compete with Institutional Investor Inc.'s biweekly Money Management Letter. Both provide tips on investment managers hired by pension funds as well as which funds are screening managers.

Mr. Chimberg worked for Money Management Letter for about 1½ years. He left in August 1985 to work in public relations for two consulting firms and, later, to do free-lance writing.

By offering his newsletter at twice the frequency for lower cost ($595 annually vs. $1,275 for Money Management Letter) he is taking direct aim at his former employer.

"I've long thought there was a need for a weekly publication to cover this business," Mr. Chimberg said.

While acknowledging the competition with Money Management Letter, he doesn't anticipate the advent of "newsletter wars."

Tom Lamont, editor of the newsletter division at Institutional Investor, New York, said he isn't worried. "I'm not concerned we're going to suffer any erosion" of subscribers, he said, adding there were no immediate plans to change the publication's frequency.

Business decisions hurt Salomon rating

By Brad Rudin

NEW YORK — Salomon Inc., which recently received lower credit ratings from the two major agencies, is at a junction at which management decisions could affect the firm's creditworthiness for years.

Salomon's problems mirror, to varying degrees, pressures felt by other Wall Street firms.

The giant securities firm has tried to pare costs by dismissing 800 employees, abandoning plans for a huge office tower in midtown Manhattan and scrapping unprofitable units.

Although these measures should bolster credit quality, the firm's move into merchant banking pushes its risk profile in the opposite direction.

Moody's Investors Service, New York, last month downgraded Salomon's senior long-term debt to A 1 from Aa 3. "Various alterations in the firm's capital structure, as well as recent adverse operating results, have diminished risk-adjusted capital and debtholder protection," the rating agency said.

In December, Standard & Poor's Corp., New York, reduced the firm's senior debt rating to A+ from AA−. "The downgrade reflects weaker operating performance due to the cost of the firm's aggressive business and overseas expansion, volatile trading results and increasing competition for its principal institutional businesses," Standard & Poor's said.

Salomon declined comment on the rating changes.

Photo by Arnie Adler

Salomon, based at 1 New York Plaza, is facing increased pressure on its credit quality.

The recent downgrades will have little immediate impact on Salomon, said Michael W. Blumstein, the brokerage industry analyst at First Boston Corp. "I don't get the impression they are about to sell huge quantities of long-term debt," he said, adding the firm's commercial paper rating has remained unchanged.

John Jerome Kriz III, a senior analyst at Moody's, attached more importance to the rating change. "Securities firms are very sensitive to their credit standing," he said. "A strong Moody's credit standing can support a securities firm's profitability as well as its ability to (pursue) certain types of business." Interest expense, which is a function of credit rating, is typically an investment bank's biggest cost.

Salomon's role as an intermediary in the swap market is a business that could be affected by its rating, Mr. Kriz said.

Although neither Moody's nor Standard & Poor's changed Salomon's commercial paper rating, the cost of short-term capital could be raised because of the changes in the long-term debt rating, Mr. Kriz said, noting variations in spreads exist within

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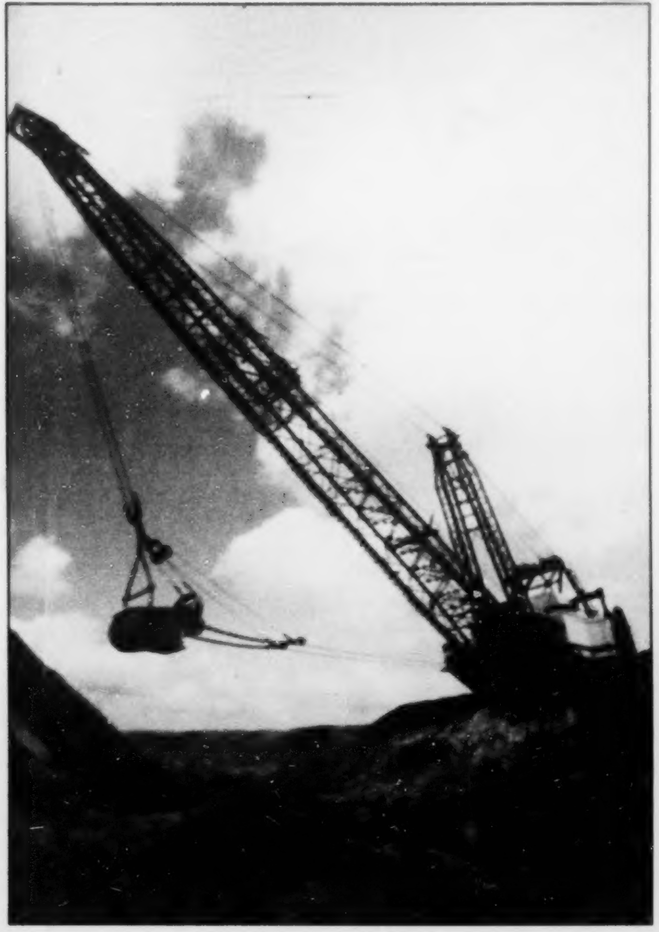
Financing volume climbs

'Esoteric' instruments perk up deals



IMC Fertilizer Group was one of the corporations whose common stock issues helped boost financing volume last month. Its $220 million issue was underwritten by Merrill Lynch Capital Markets.

By Brad Rudin

Stock and debt financing volume moved up sharply in January as the financial markets pushed ahead with their post-Oct. 19 recovery on the strength of good economic news.

Investment bankers spiced up the expanded volume of deals with some new, modified or revived esoteric instruments.

Stability in the stock market led to common equity volume of $970.1 million in January, 34.6% higher than the $720.8 million recorded in December, according to data provided by IDD Information Services Inc., New York.

Among the largest common stock deals issued, and their underwriters, were:

- IMC Fertilizer Group — $220 million — Merrill Lynch Capital Markets.
- Charter One Financial — $34.4 million — Merrill Lynch.
- Allwaste Inc. — $20.6 million — Alex. Brown & Sons Inc.
- Ivax Corp. — $13.1 million — Dean Witter Capital Markets.

Issuers did the bulk of their debt financing in the second half of January, after good news about the November trade figures sparked a rally in the bond market. Large non-mortgage-related debt issues sold in January include:

- BVPS Funding Corp. — $646 million collateralized lease bonds 9.9% and 11% due 1999 and 2017 — First Boston Corp.
- Columbia Pictures Entertainment Inc. — $575 million senior subordinated debentures and notes 10⅝% and 9⅞% due 1998 and 2018 — Allen & Co.
- Mobil Oil Canada Ltd. — $500 million 8⅜% notes due 1993 — Merrill Lynch.

Corporate borrowers paid an average yield to maturity of 9.4%

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January was a rousing month for investment bankers and the investors they seek to pump money into client coffers. Among the issues was a high-yield debt offering for $125 million in 10-year notes for Manor Care Inc., below, underwritten by Drexel Burnham Lambert Inc., and the $13.1 million common stock offering for Ivax Corp., right, underwritten by Dean Witter Capital Markets.

N.Y. sets unusual property strategy

By John Covaleski

ALBANY, N.Y. — The $35 billion New York State & Local Retirement Systems is allocating up to $1.4 billion to implement an unusual direct investment strategy of hiring only one manager per property type.

The fund is signing a contract with Richard Ellis Inc., New York, to invest in office and retail properties, and is in negotiations with TCW Realty Advisors, Los Angeles, to invest in industrial properties. Although no amounts were given, Ellis could get most of the money because the fund's portfolio is to be invested 50% in office, 25% in retail and 25% in industrial.

Pension funds hire managers that specialize in one property type, but they usually hire more than one manager in each category.

"We believe it is the best approach," said Robert J. Steves, the fund's assistant deputy comptroller for real estate investments.

"We'll hire managers based on their property-type expertise and keep them focused to avoid an overlap and inefficiencies. We want to invest in real estate; we don't want to be traffic cops."

Mr. Steves said it's possible the state fund eventually will hire more than one manager for each property type. "We may decide we want further diversification," he said. "We're not wedded to the idea."

Jake Young, senior manager of Roulac Real Estate Consulting Group, San Fran-

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Top 20 public pension funds using private placements

Fund	$ millions
California Public Employees'	44,036
New York State & Local	38,747
New York City Retirement	33,633
California State Teachers	23,714
New York State Teachers	23,035
New Jersey Division/Investment	19,785
Texas Teachers	18,930
Michigan State Employees	16,680
Wisconsin Investment Board	15,632
Ohio Public Employees	14,985
Ohio State Teachers	14,821
Florida State Board	13,700
North Carolina Retirement	12,446
Pennsylvania Public School	12,021
Washington State Board	10,600
Minnesota State Board	9,706
Oregon Public Employes	8,789
Maryland State Retirement	8,274
Los Angeles County Employees	8,262
Pennsylvania State Employes'	7,965
TOTAL	355,761

Corporate pension funds using private placements

Fund	$ millions
AT&T	716
USX	300
Honeywell	213
Minnesota Mining & Manufacturing	200
Goodyear Tire & Rubber	152
Textron	75
Atlantic Richfield	49
Travelers Insurance	35
Southern New England Telephone	28
E.I. du Pont de Nemours	13
Armco	10
Union Carbide	10
Xerox	10
CIGNA	9
Commonwealth Edison	7
Chrysler	2
TOTAL	1,829

More issuers turn to private market

By Marcia Parker

The private placement market, once a "sleepy adjunct" to the public market and dominated by lower credit-quality issuers and highly complex debt deals packed with pages of ironclad covenants, is coming of age.

Some investment bankers are predicting issuers' cost of capital will come down as a result.

Now more issuers of varying sizes and credit quality are tapping the market, which has grown to more than $1.2 trillion in 1986 from $24 billion six years ago.

Some are entering for the first time, spurred by the closed window for equity offerings following Black Monday. Others are turning to the private market because they are discovering it offers more than traditional straight debt financing and that some of the onerous traits associated with private placements, such as extremely tough covenants, are gone.

A host of new products — including straight equity deals — are being fashioned by private market professionals to compete head on with what's available in the public market. And covenants are being loosened to mirror the public market.

The efforts are paying off in part because, historically, buyers of private market products — insurance companies and, increasingly, corporate and public pension funds — have increased their risk tolerance in the hope of boosting returns. That, in turn, has spurred them to seek investment vehicles that can generate those hefty returns — many of which are offered in the private market. And relatively new players, such as cash-rich Japanese institutions, are hungry for those same high-yielding investments.

"In the '60s right through the '70s and the early '80s, the private placement market was a sleepy adjunct to the public market," Jerome Greene, managing director, Merrill Lynch Capital Markets, told a conference on private placements in January that attracted more than 250 participants.

"We've witnessed the most profound change in the private placement market in the past five or six years. We've seen a whole new role for the private market professional. We've seen the development of an array of private placement products that make it almost essential for any issuer to take a look at the private placement market before attempting any financing," Mr. Greene said.

He said companies looking for money have a lot more sources of capital and structures for that capital than ever before.

"It means that a lot more institutions are competing for (an issuer's) business and that its cost of capital will be lowered as a result. It also means that the financial staff of the company has got to explore as many of these alternatives as possible to get the best deal," Mr. Greene said.

Avon Corp., New York, hasn't done any private placements, but is considering "an international private placement transaction," said John Donaldson, vice president and treasurer. Avon would tap the market "for corporate financing, not as a pension fund investment."

"We've always looked at it as an alternative financing source, but in the past we've found it was not competitive with the public market," Mr. Donaldson said, adding the enhanced access of many public companies to the public credit market has

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